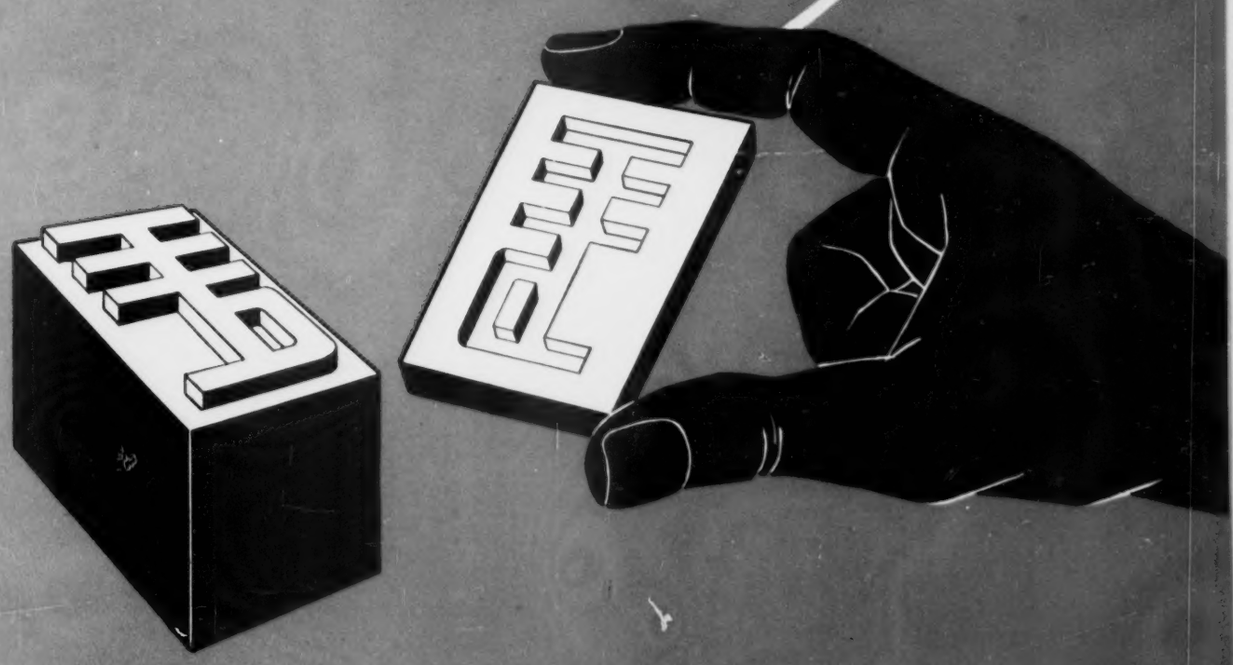
OCTOBER 1951

PLEASE ROUTE THIS COPY TO	
Manager	Pressroom Foreman
Production Mgr.	Bindery Foreman
Plant Supt.	Mailing Foreman
Platemaking Foreman	Maintenance Supt.
Composing Foreman	Purchasing Agt.
For filing, please return to	

PRINTING EQUIPMENT *Engineer*



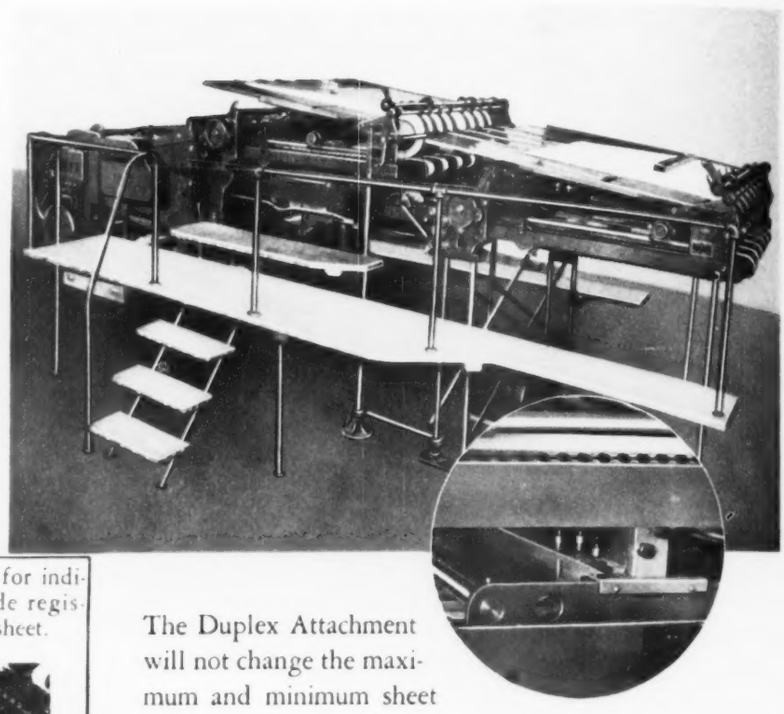
AN INDUSTRY-WIDE TECHNICAL PUBLICATION

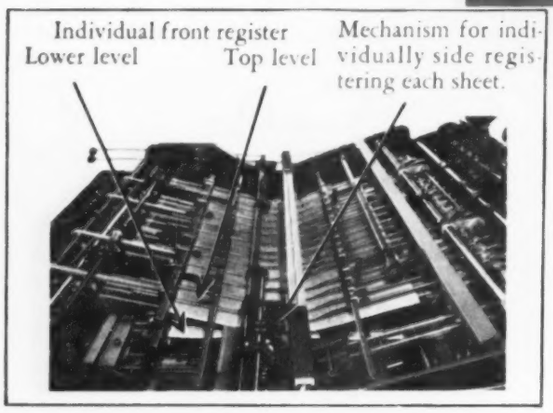
How to Adapt Your Present Dexter Model "N" Quad to Run 128 Pages...

Dexter Model "N" Quad Book Folder, equipped with New Duplex Attachment. Rear view showing two Cross Feeders. Inset shows additional drop bar perforator as seen from side of conveyor, underneath first Cross Feeder.

Your Model "N" Quad can now be converted to practically double its present capacity. With the New Dexter Duplex Quad Attachment it will deliver *four* 32-page closed head signatures, perforated head and foot — or two 64-page signatures (inserted 32s) — instead of its present *two* 32s.

This greatly stepped-up production can be effected without materially increasing floor space or operating cost . . . and your Model "N" Quad can *still* be operated as a standard single quad delivering the usual four 16-page signatures or two 32-page signatures (inserted 16s) at each operation.





Duplex Attachment as seen from above. Sheets at both first fold levels.

The Duplex Attachment will not change the maximum and minimum sheet sizes now handled by your Model "N". However, it *will* effect savings in folding costs and *still further* economies in subsequent gathering and sewing operations.

We will be glad to send you complete information about the new

DEXTER DUPLEX QUAD ATTACHMENT

Dexter • Christensen • McCain

Modern Machines for Printers and Binders

Dexter Folder Company, General Sales Offices, 330 West 42nd Street, New York 18, N. Y.

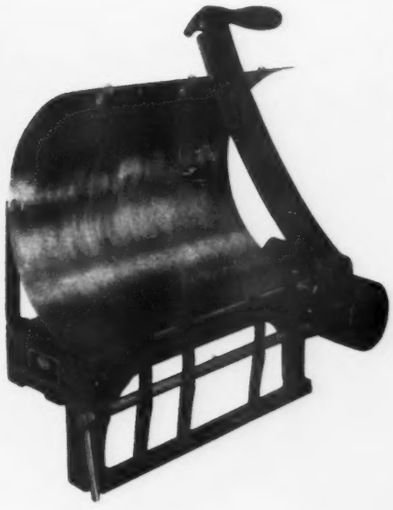
Associated with the de Florez Company for Special Engineering

Branch Offices, Domestic and Foreign Agents

give your stereotype crew these Sta-Hi "mechanical helpers"

STA-HI® *Even-Temp Mat Dryer*

● An aid in obtaining high shrinkage in dry mats, by use of circulating hot air. Heat is applied uniformly over entire mat. Has thermostat, electronic timer. Can also be used as a flat scorcher.



● Takes a final trim on mat in its curved form just before casting, providing uniform clip-to-clip length of mat and preventing many casting box troubles.

STA-HI® *Finaltrim Curved Mat Shears*

● Applies vacuum to any size mat from small jobs up to full eight column page, to assure more perfect flat casts. Has powerful toggle type lock-up, two sets of gauges.

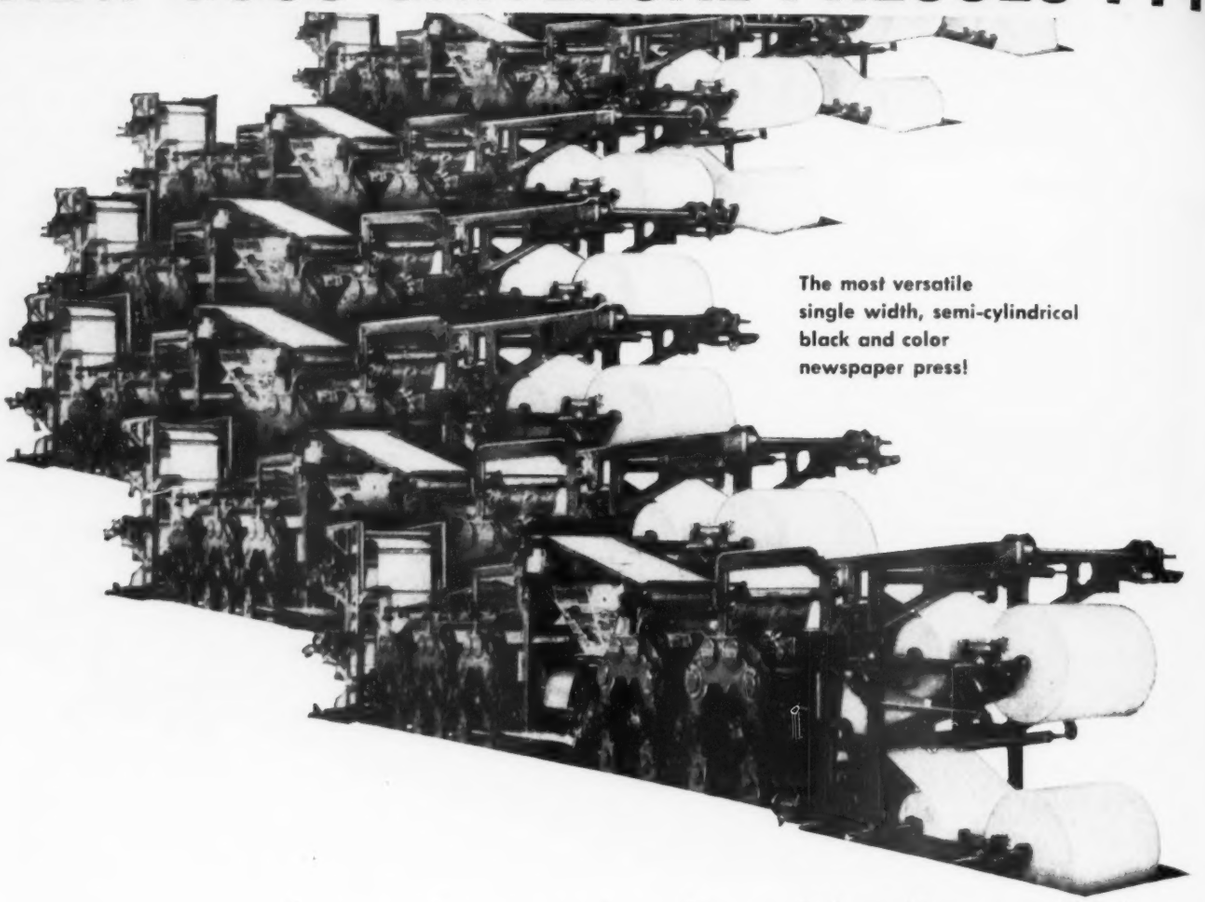
STA-HI® *Vacuum Flat Casting Box*

Sta-Hi Corporation

"SUPERIOR NEWSPAPER PRODUCTION MACHINERY"

235 W. WASHINGTON BOULEVARD ● BOX 152, WHITTIER, CALIFORNIA

NEW GOSS UNIVERSAL PRESSES . . .



The most versatile single width, semi-cylindrical black and color newspaper press!

for an impressive list of leading publishers

It's Goss again . . . leading the field! These sales prove that the Universal is the favorite in its class. Latest installations include: Abilene (Tex.) Reporter-News . . . Boise (Ida.) Statesman . . . Elkhart (Ind.) Truth . . . Fredericton (N.B. Can.) University Press . . . Kankakee (Ill.) Journal . . . New Castle (Ind.) Courier Times . . . Salisbury (N.C.) Post . . . San Angelo (Tex.) Standard-Times . . . San Mateo (Cal.) Times . . . Temple (Tex.) Telegram . . . and Yakima (Wash.) Republic & Herald.

In addition, Goss Universal presses are on order and being installed for the following: Albuquerque (N.M.) Journal . . . Biloxi-Gulfport (Miss.) Herald . . . Manchester (Conn.) Herald . . . New York (N.Y.) World Wide Press . . . Oil City (Pa.) Derrick & Blizzard . . . Paducah (Ky.) Sun Democrat . . . Thomasville (N.C.) Charity and Children . . . and Connellsville (Pa.) Courier.

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Cut exposure time in half. Assure sharper dots. Eliminate dot undercutting by crossover of reflected light rays.

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Provide uniform illumination on work of any size. Extreme steadiness of light volume—constant color temperatures. Eliminate the illumination variable in accurate control of densities. Have the power to punch through dense Kodachromes.

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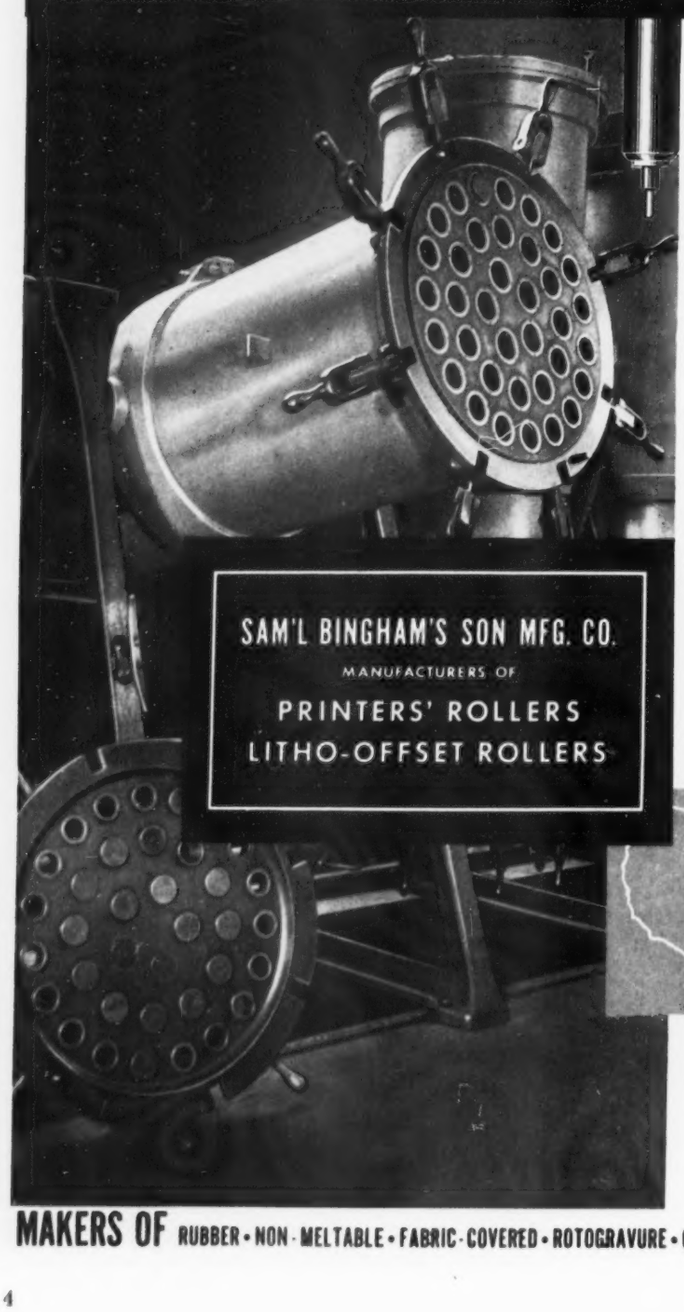

daily serves printers in 31 states

With 19 modern factories making rollers for use today on today's presses . . .

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Our reward is the faith of thousands of American printers who swear by Sam'l Bingham's Son Mfg. Co. rollers and our ability to deliver "The Right Roller—Right Away!"

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WINTER USE

SHIP YOUR OLD ROLLERS TO THE

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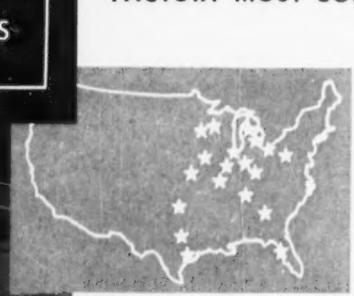

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PRINTING EQUIPMENT *Engineer*

AN INDUSTRY-WIDE TECHNICAL PUBLICATION

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

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LEADING ARTICLES

October 1951

Fine New Printing Plant For Sherwin-Williams Co. 33
EDWARD H. OWEN

Pressroom Illumination. 40
PHILIP E. TOBIAS

Control of Ink Mist in Printing Pressrooms. 43
H. EARLE RUNION

Coated Stock—Grain Direction, Wire and Felt Side. 47

A Different Approach to Pre-Press Makeready. 48

Film vs. Lead. 50
THOS. P. HENRY

Gleaming Models of Newspaper Presses. 52

The ABC of Offset—XX. 54
GEORGE JOS. LENZER

NAPL Technical Forum. 56
ADAM HENRI REISER

Equipment and Supplies. 59
- Combustion Equipment, 42
- Water Fountain Control, 59
- Chamois for Cleaning Rollers and Plates, 59
- Cleaning Gravure Press Removable Ink Fountains, 59
- Armed Forces Typecuts, 59
- Humidity Indicator, 60
- Illustrated Broadside, 60
- Three-Dimensional Planning, 60
- Direct Positive Paper, 60
- Safety Air Vent Spout, 60
- Truck Catalog, 60
- Blanket Thickness Gauge, 60
- Air Conditioning Units, 60
- Improved Rosback Auto-Stitcher, 60

Methods of Justification. 61
FRANK DeWITT

Reed Talks Straight From Shoulder. . 62

Illinois Mechanical Conference. 64

Dry Offset Printing Plates. 66
(Summary of Address by Bernard Sears)

Patents For The Graphic Arts. 70

Books. 75
- Estimating System, 75
- Typography and Design, 77

Executive Paragraphs. 78

Conference Dates. 80

NPA Printing and Publishing Div. . . 86

Eastern Division SNPA Conference. . 89

Can Any Publisher Afford an Obsolete Composing Room?

SCOTT Ideal Matrix Rolling Machines

The Scott Ideal Matrix Moulding Machine rolls any kind of matrix. The form is started under the upper cylinder by the application of a crossed belt drive which permits the cylinder to vary its surface speed between 1″ and 1¼″ without slippage. This drive allows the upper cylinder to find its own float without strain on the matrix. Powerful rolling mill effect and straight line pressure assures easy operation.

With the Scott free moulding cylinders all imperfections are eliminated, thus producing sharp, full depth rolled mats free from mechanical buckling.

Your inquiry regarding these Scott Ideal Matrix Machines is invited.

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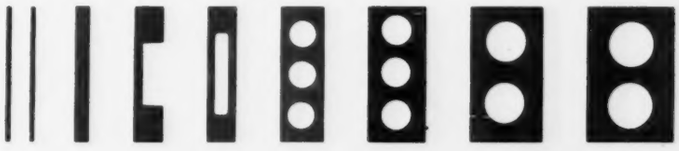
WALTER SCOTT & CO. INC.

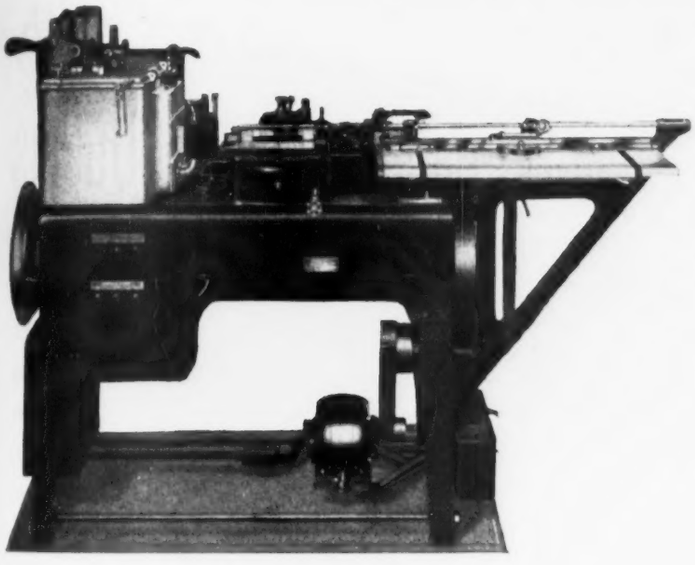
PLAINFIELD, NEW JERSEY

The Elrod

This efficient equipment meets the strip material requirements of the modern composing room for consistent performance and the production of an abundance of high quality leads, slugs, rule and base material, available when your compositors need it. The examples shown below



suggest the wide variety and thickness (1-point to 36-points) of the product to be had from one single Elrod machine. They also indicate why so many outstanding printing and publishing plants have made the Elrod the basis of their strip material supply, assuring an ample quantity at all times, and expediting the entire production program.



The Elrod is simple in design and mechanism, and produces material in one continuous strip of metal, cooled and solidified under pressure. It affords the utmost in dependable service, with moderate operating costs and upkeep expense.

Ludlow Typograph Company 2032 Clybourn Avenue, Chicago 14, Illinois

Set in members of the Ludlow Karnak family

It's a Trick of the Trade

To change imprints without losing register, use Hi-Speed Quoins. Just record setting of quoin as shown on indicator . . . unlock . . . change slugs . . . then return to original setting. For small imprint forms, there's a 3" Hi-Speed Quoin that will do the trick.

but it's no trick to make more money with

Challenge Hi-Speed Quoins

Any time you can save 70 to 80% of your lock-up time — that's money in your pocket. And you can do it with Challenge Hi-Speed Quoins. Each quoin is, in effect, a series of quoins operated with a single key. As a result, only two quoins are needed to lock up forms that ordinarily require from four to eight ordinary quoins.

The Challenge Hi-Speed Quoin is a self-contained unit—only one piece to handle. The expansion is powerful and direct — no reglets required . . . no ***work-ups!***

Made in seven sizes. Write for complete details, now. 688

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DEALERS IN ALL PRINCIPAL CITIES

The new and Improved

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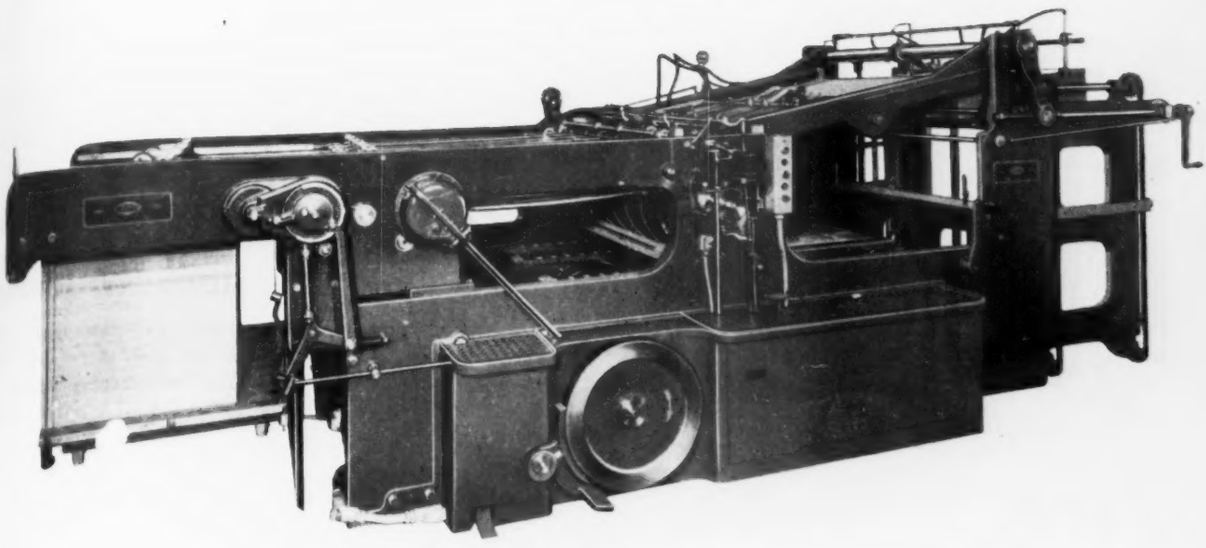
Cutter and Creaser



Heavy • Faster • New Construction

Thirteen hundred pounds heavier than the original machine. Two hundred and fifty impressions per hour faster. The cylinder, bed, sideframes and wayframes are of new and heavier design. New metallurgy and engineering refinements have been used in the heavier bed driving mechanism. The bed is now made of high alloy iron instead of aluminum alloy. The Cutter and Creaser is basically new throughout yet retains the proven principles of its predecessors. Write for literature.

miller
printing machinery co.
pittsburgh, pennsylvania

7 CUTLER-HAMMER DRIVE MORE ECONOMICAL, DEPENDABLE

Cutler-Hammer Press Drives and Control in plant of

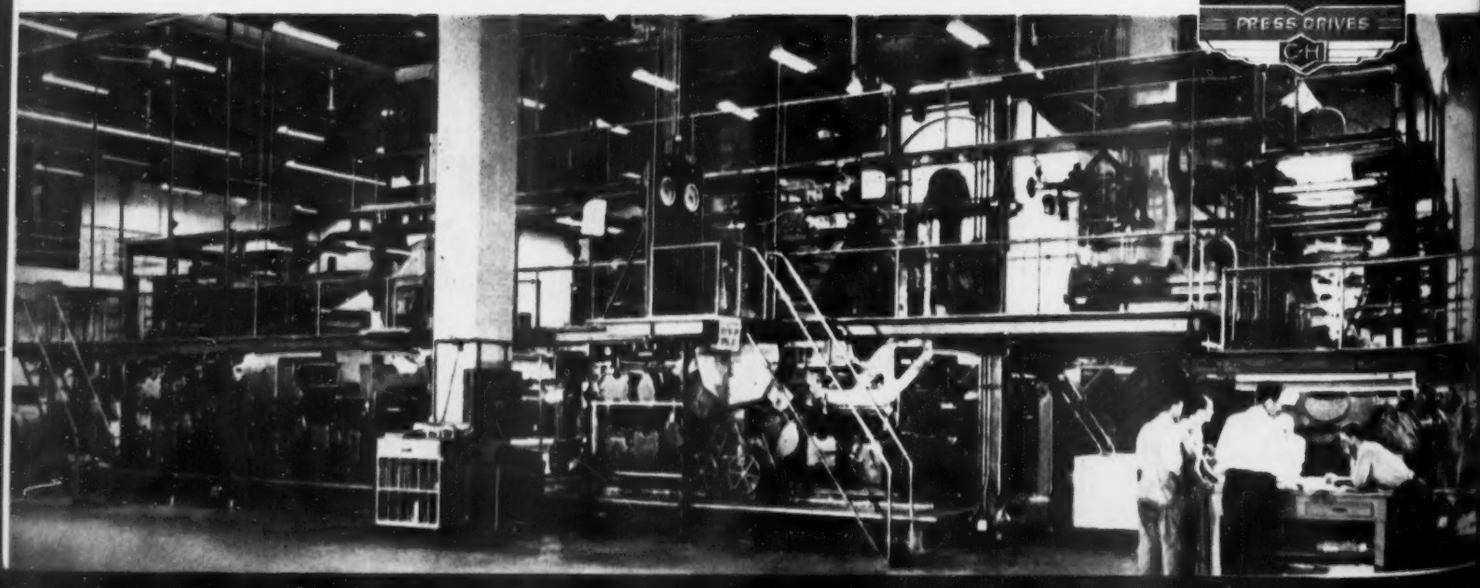
THE MILWAUKEE JOURNAL

This great evening and Sunday newspaper in Milwaukee with press runs of over 340,000 on weekdays and 450,000 on Sundays is printed on Hoe presses driven by Cutler-Hammer 2 motor press drives.

Cutler-Hammer Press Drive and Control in plant of

AMERICAN COLORTYPE CO.

The Goss Double 5-color Magazine Presses shown below in The American Colortype Plant at Chicago run continuously printing color inserts for Life Magazine. These presses are equipped with Cutler-Hammer 200/10 h.p. a.c. 2 motor drive and control equipment.



FEATURES THAT CULMINATE IN AND PRODUCTIVE PRESS OPERATION

Through the design and development of a new newspaper controller and the adoption of an industrial duty Magnetic Clutch driving the press shaft on starting, Cutler-Hammer Engineering has further advanced the fundamental superiorities of the alternating current two-motor drive in the field of newspaper and periodical printing. The features of the improved Cutler-Hammer Press Drive are set forth below; they culminate in press drive performance, dependability and economy that have no equal. CUTLER-HAMMER, Inc., 1460 St. Paul Ave., Milwaukee 1, Wis.

1 ***The Cutler-Hammer Press Drive and Control cost less initially, cost less to install, cost less to maintain.***

This simple drive consisting of a small constant speed motor and a single adjustable speed driving motor costs less than a drive using multiple motors. The Cutler-Hammer Control requiring no rectifier equipment, the equivalent of an ac-dc converter, with the complex associated equipment, also costs less.

Installation cost of the ac 2 motor drive is from 30 to 40% less than for other drives. The control for the Cutler-Hammer Drive is in the form of a factory mounted and wired cubicle which can be installed in your plant easily and rapidly.

The alternating current motor is the most rugged of all and has only collector rings as sliding contacts. The Cutler-Hammer Control is made up of rugged magnetic components standard throughout industry, and lacks those fragile parts that cause so much trouble elsewhere. An industrial duty magnetic clutch is used in place of the ratchet type overriding clutch, eliminating the side strains and unequal bearing and gear teeth wear associated with the latter type. The magnetic clutch eliminates the use of a brake on the large motor which on the old style drive was released and set on each inching operation. On the C-H Drive, the magnetic clutch serves as the large motor brake, giving smooth, rapid, positive braking action. These features insure long, dependable service with reduced maintenance.

2 ***The Cutler-Hammer Press Drive simplifies the task of putting an edition on the press.***

The use of a magnetic clutch provides a smooth cushioned start with gradual acceleration to threading speed. The pressman has better control of plate cylinder position and fewer jogging operations are required in replating a press. All steps of acceleration are smooth, there are no damaging shocks or jerking of the fragile web.

The new Cutler-Hammer Controller has 90 definite speed points with smaller increments between points. Acceleration to any desired speed or to full printing speed is smooth and automatic. Full speed acceleration is accomplished in 40 seconds. Acceleration curve is virtually a straight line.

3 ***Cutler-Hammer Drive provides high operating efficiency.***

The efficiency of the alternating current motor is conceded throughout industry. The wound rotor motor especially demonstrates its efficiency on today's high speed presses operating with high speed pasters.

The C-H Drive employs a small constant speed motor for starting. Current inrushes are far below those for main motor starting. *The starting motor also turns the driving motor through the magnetic clutch until the main motor contactor is closed. The magnetic clutch drops out when the main motor contactor closes.*

Use of magnetic clutch permits the use of a smaller high speed driving motor.

4 ***The Cutler-Hammer Press Controller provides complete flexibility.***

The new Cutler-Hammer Controller provides 90 different speed points, a feature achieved by a unique scheme of resistor design. It provides added smoothness of acceleration, controlled acceleration to running speed, subsequent minute changes in speed, and smooth deceleration. It is possible to proceed to a stable speed intermediate between threading and actual printing speed.

18 interlock circuits afford tremendous flexibility in the case of accessory press equipment, dryers, valves, etc.

5 ***Both Drive and Control are economical of space.***

The small number of elements in the C-H Drive take up less space. Elements mounted in line, form a long, narrow, compact "package" alongside the press. Where access to paper reels is a factor, the Cutler-Hammer Drive can be suspension-mounted overhead.

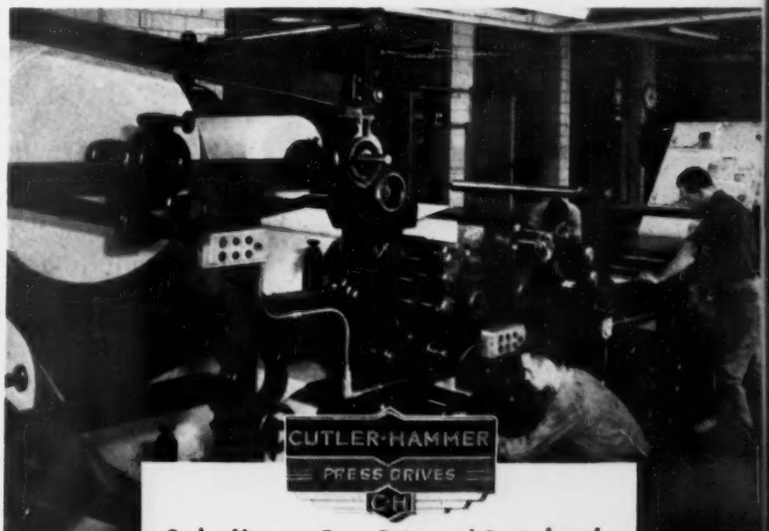
Control cubicles are compact, can be installed in small rooms elsewhere. Their space economy is especially notable in comparison with equipment using rectifier apparatus.

6 ***The simple, standard control components pose no problem to your plant electrical men.***

The Cutler-Hammer Control system offers a wide range of advantages, yet the components used in this control are simple, standard, known throughout industry . . . nothing to baffle your own electrical men and to require factory-expert servicing and attention. No unfamiliar rectifier components to cause confusion and delay.

7 ***The Cutler-Hammer System is the safest of all systems.***

Complete preventive safety is standard in the Cutler-Hammer Drive and Control system. Only intentional operation is possible. Bell and light warning is compulsory to inching the press and to acceleration to running speeds.



Cutler-Hammer Press Drive and Control on the

SALEM, OHIO, NEWS

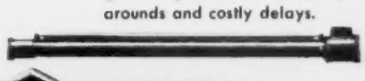
This evening newspaper with a daily circulation of approximately 7,700 copies is printed on the press shown above equipped with a Cutler-Hammer Drive and Control.

Cutler-Hammer Web Break Detectors

Stop press quickly if web breaks. Scientifically designed to eliminate bouncing and chattering on web. Web can be rethreaded without latching detectors. Easy to mount.

Cutler-Hammer Web Severing Device

A Cutler-Hammer "original" that has resulted in greater total savings than any other single accessory. It instantly slashes broken web close to impression and guards against destructive wrap-arounds and costly delays.



CUTLER-HAMMER
PRESS DRIVES
C-H

when durability counts...

you can count on Mercury Products

Tough as rhino hide, Mercury Rollers and Blankets withstand heavy duty usage that would demolish ordinary accessories. At the same time, Mercury coatings are supple and pliant—have just enough "give"—to compensate for irregularities in your forms, thus reducing make-ready. Yet they have the ability to correctly handle ink on all types of jobs for all Graphic Arts processes.

RAPID ROLLER CO.
FEDERAL AT 26TH
CHICAGO 16, ILL
D. M. RAPPORT
PRESIDENT

First five-color sheet-fed offset press relies on TIMKEN® bearings for accuracy

BUILT for Stecher-Traung Lithograph Corporation's San Francisco plant, this five-color Harris offset press is the largest machine ever produced by Harris-Seybold Company and the first of its kind for the graphic arts industry.

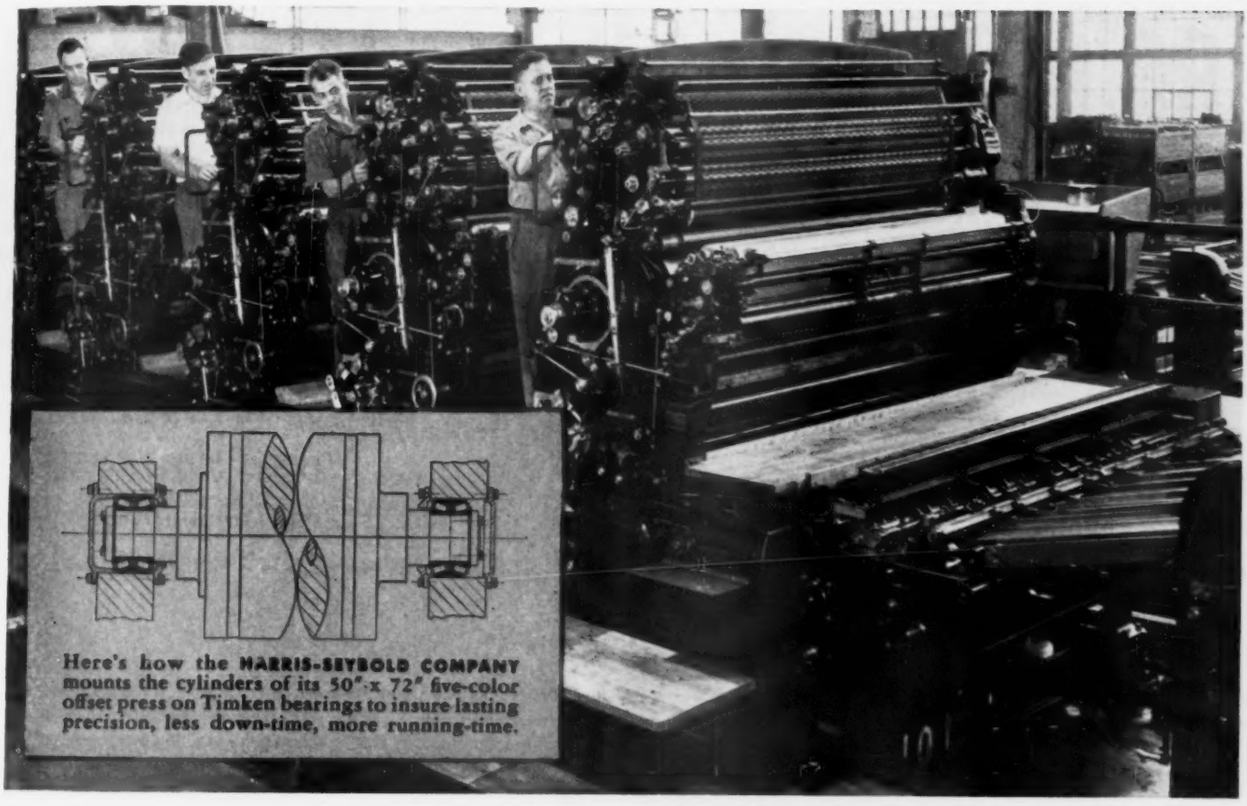
To maintain the uniform impression and extremely close register necessary in the printing of five colors in one pass through a press, Harris-Seybold engineers have mounted the plate cylinders, blanket cylinders, impression cylinders and transfer cylinders on Timken® tapered roller bearings. Thirty-four Timken bearings are also used at other vital points in the press.

Timken bearings keep cylinders permanently aligned, permitting minute pressure adjustments. They save power and prevent wear. By simplifying lubrication they reduce maintenance costs. And Timken bearings on the cylinder shafts eliminate all speed restrictions due to bearings.

The tapered construction of Timken bearings permits them to carry both radial and thrust loads in any combination. Line contact between rollers and races of Timken bearings gives extra load-carrying capacity. Their true rolling motion and incredibly smooth surface finish practically eliminate friction. Made from Timken fine alloy steel, Timken bearings normally last the life of the press.

No other bearing can give you *all* the advantages you get with Timken bearings. Insist on bearings that carry the trade-mark "Timken" for every machine you build or use. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO."

This symbol on a product means its bearings are the best.



Here's how the HARRIS-SEYBOLD COMPANY mounts the cylinders of its 50"-x 72" five-color offset press on Timken bearings to insure lasting precision, less down-time, more running-time.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

FINISHED TO CLOSER TOLERANCES

Finishing to incredible smoothness accounts for much of the precise, smooth rolling performance of Timken bearings. This honing operation is typical of the amazingly accurate manufacturing methods of the Timken Company.

The Timken Company is the acknowledged leader in: 1. advanced design; 2. precision manufacturing; 3. rigid quality control; 4. special analysis steels.

NOT JUST A BALL ○ NOT JUST A ROLLER ⊂⊃ THE TIMKEN TAPERED ROLLER ⊂⊃ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION ✳

54 Hours with an Ink Truck Driver: Starting from Borger, Texas, on typical Huber Ink delivery to Little Rock, Ark., Dalton Hillburn (*far left*) receives orders for 1250-mile round trip. Truck shifts offer 15 combinations for peak efficiency (*center*). At first stop (*right*): tire check.

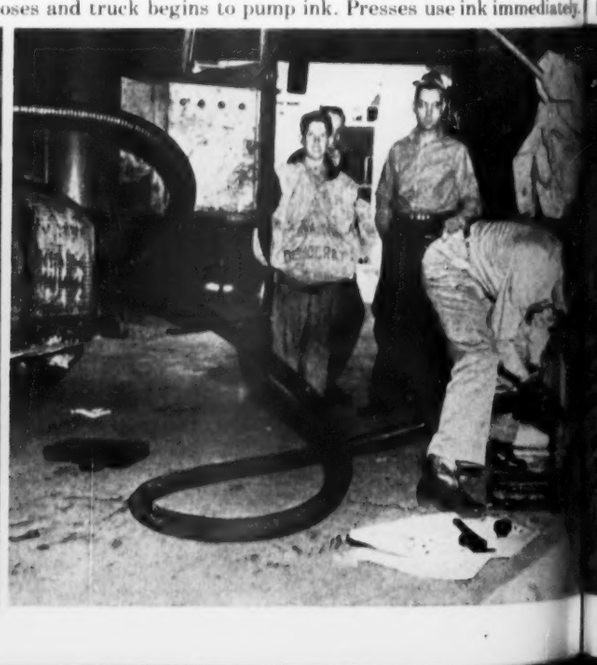
380,000 lbs. of Huber Ink Ride U.

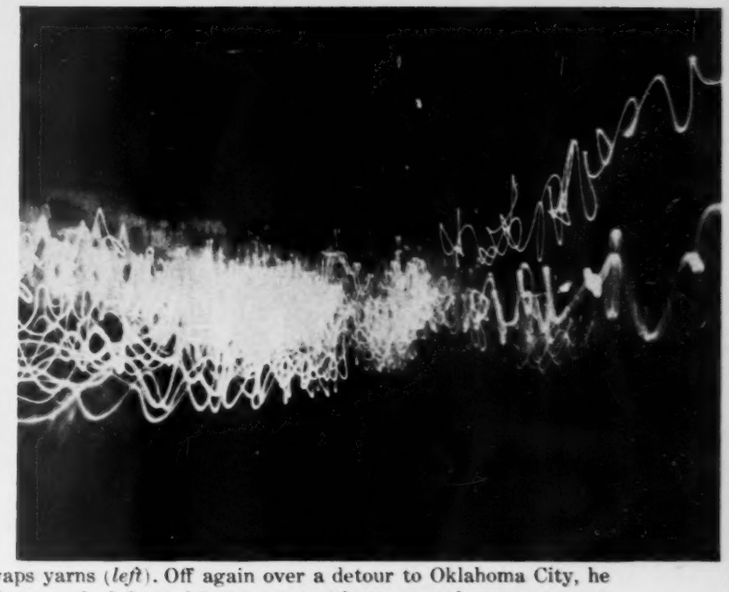
Dalton Hillburn is typical of the men of the Huber Ink Delivery Fleet. His home base is Borger, Texas, and from here delivery routes fan out into the entire Southwest.

The 1250-mile round trip from Borger to Little Rock, home of *The Arkansas Democrat*, is one of Hillburn's regular assignments; takes about 54 hours for the entire run. Press foremen, like J. B. Marre of the *Democrat*, look forward to Hillburn's regular calls; for he always has a story or two... and he brings the quality of product and service that newspapers have come to expect from Huber and Huber drivers.

Borger is only one key center in Huber's vast transportation system. Other drivers on hundreds of routes—radiating from factories and tank sta-

Arriving at his delivery point—Little Rock, home of *The Arkansas Democrat*, driver demonstrates his special skill in backing into customer's delivery entrance (*left*). *Democrat* newsboys look on as Hillburn connects hoses and truck begins to pump ink. Presses use ink immediately.





At gas and coffee stop at El Reno, Okla., Hillburn sees old friends and swaps yarns (*left*). Off again over a detour to Oklahoma City, he meets a great blaze of oncoming street and headlights and neon signs. (Photographed from driver's seat with an open-shutter camera.)

U. Highways Daily

tions 'round the nation—carry 380,000 pounds of Huber Ink every day over U. S. highways...help keep this the world's best-informed nation.

J. M. HUBER CORPORATION

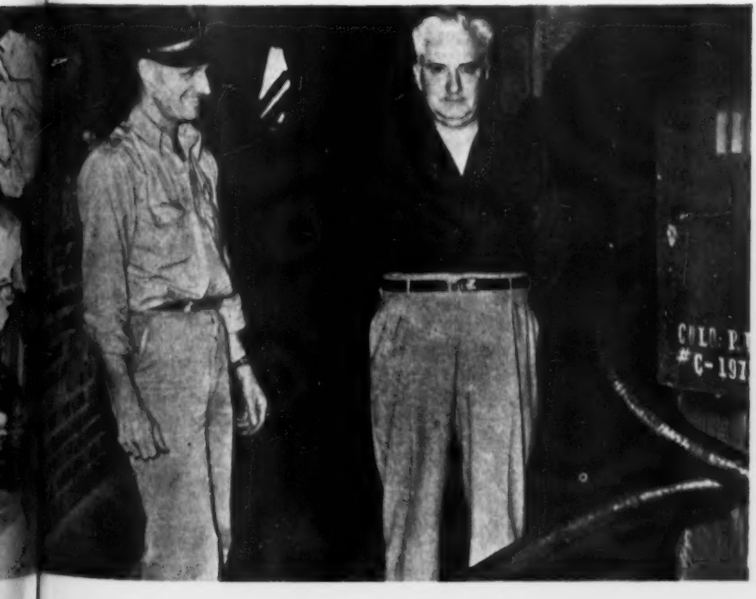
Huber Products in Use Since 1780

HUBER INKS

Sales Offices: Boston · Brooklyn · Chicago · New York · East St. Louis, Ill.
Plants: Bayonne, N. J. · Borger, Texas · Boston, Mass. · Brooklyn, N. Y.
East St. Louis, Ill. · McCook, Ill.

Log is brought up to date at every stop. Truck covers 75,000 miles a year delivering ink to Huber's Southwest customers.

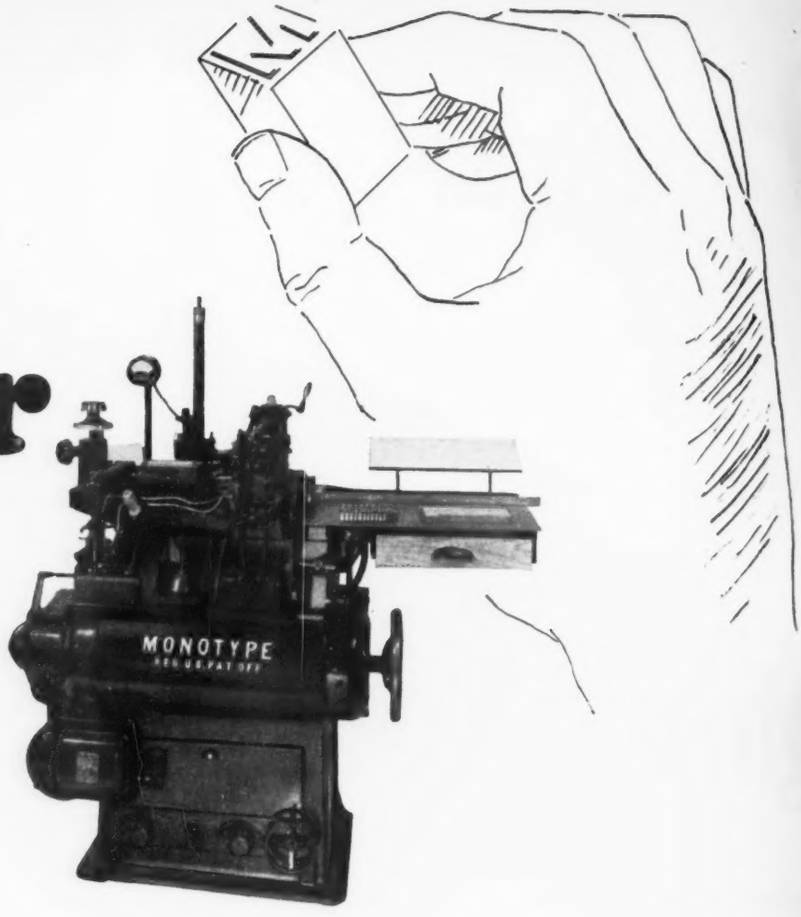
Ten tons of Huber Ink emptied from his tank truck, Hillburn reports, "Job finished," to Press Foreman J. B. Marre. After weighing out on public scales, Huber driver heads for home. Hillburn arrives at Texas border, 100 miles from home, nearly 50 hours after leaving Borger.

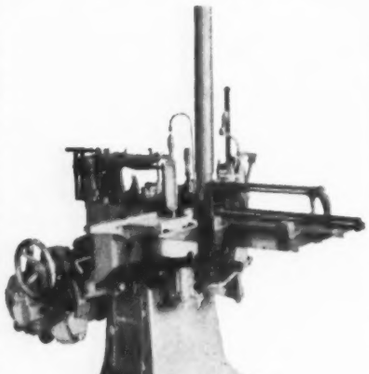


THE MONOTYPE

giant caster

has repeatedly proved that lines of display type can be set faster by hand in type from cases than by any other method





the MONOTYPE

TYPE-&-RULE CASTER

Leads and Slugs in all sizes from 1½ to 12 point, for spacing and cut-mounting, can be made on the Monotype Type-&-Rule Caster in continuous Strips or automatically delivered cut to any desired measure. The molds for making Rules are used for making Leads and Slugs .888 inch in height, and can be equipped to make strip material of any other height down to .743 inch

The Monotype Giant Caster makes type of uniform height-to-paper, clear and sharp of face for good printing, and densely cast to resist the pressures of all printing, plating, and mat-making processes. The typographic resources available to Monotype Giant Caster users include all Monotype cap and lowercase fonts, figures and points in all available sizes from 14 to 72 point and 84 point title line, special ornaments and corner-pieces from 14 to 72 point, special full-face figures and fractions from 14 to 108 point, special superior figures in sizes up to 72 point, and quads and spaces from 14 to 72 point. Metal furniture from 14 to 72 point sizes can be made in any length from 1 pica up to whatever length is desired. Full information will be sent gladly on request.

THERE IS ONLY ONE monotype

LANSTON MONOTYPE MACHINE COMPANY • 24th at Locust St., Philadelphia 3, Pa.

The name MONOTYPE is a registered trade mark, and therefore the exclusive property of Lanston Monotype Machine Company, and identifies the products of this company

BRANCH OFFICES: 116 Spring St., N. W., Atlanta 3, Georgia. • 170 Summer St., Boston 10, Massachusetts • 216 W. Jackson Blvd., Chicago 6, Illinois • 441 Lexington Ave., New York 17, New York • 55 New Montgomery St., San Francisco 5, California • IN CANADA: Monotype Company of Canada, Limited, 77 York St., Toronto 1, Ontario, Canada.

Specify MONOTYPE for the Finest in Printing

(Text set in Monotype Stymie Medium, No. 2901)

IPI, Everyday, Gemtone and Holdfast are trademarks of Interchemical Corporation.

IPI • DIVISION OF INTERCHEMICAL CORPORATION • 67 WEST 44th ST., NEW YORK 18 • ADDRESS INQUIRIES DEPT. A

WORLD'S "MOST WANTED" PHOTO BOOK PRINTED WITH IPI INKS FOR THE 17th STRAIGHT YEAR

The 1952 U. S. Camera Annual contains over 400 of the world's finest photographs—printed with IPI Holdfast halftone blacks and IPI Gemtone process colors. Your IPI salesman has a free 16-page signature for you. It is yours for the asking. Or write IPI headquarters today—67 West 44th St., New York 18, N.Y.

Isaac Goldmann Co. Picks IPI Black & Gemtone Colors for 1952 U. S. Camera Annual

Yes, for 17 straight years the world's "most wanted" photo book, U. S. Camera Annual, has been printed with IPI inks. This year Isaac Goldmann Co. of New York printed the '52 edition with IPI Holdfast halftone black and the popular IPI Gemtone process colors.

Many different printers have printed U. S. Camera Annuals since 1935, and by different processes—but always with IPI inks. Printing prize-winning photos demands the finest materials as well as superb craftsmanship.

IPI Blacks Blacker without Unwanted Bronzing or Gloss

Leading printers prefer IPI Holdfast halftone blacks because they give extra quality press results. Finer pigment dispersion gives a blacker black without bronzing, more finish without unwanted gloss.

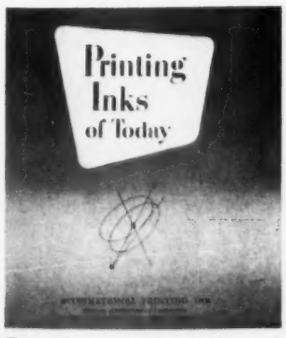
These blacks also set up faster in the pile for safer load handling right after printing. Rub and scratch resistance develops more quickly, color transfer is greatly reduced.

Gemtone Inks Add Life, Snap and Sparkle to Process Work

Printers tell us that all process work prints better with IPI Gemtone process colors. These inks are made for sheet-fed presses, dry *fast* on top of the sheet without heat. Colors sparkle, dots stay sharp, highlights bright.

Ask your IPI salesman today for examples of work printed with IPI Holdfast Blacks and IPI Gemtone process colors.

FREE BOOKLET TELLS YOU ABOUT PRINTING INKS FOR MAJOR PROCESSES



For a better understanding of printing inks in general, get your free copy of "Printing Inks of Today." Booklet introduces you to printing inks for all major processes and their development.

"EVERYDAY IS SMARTEST INK SERVICE PLAN," SAYS PRINTER WITH 16 AUTOMATIC PRESSES

"We operate 16 automatic presses ranging from Miehle Verticals through Miller Simplexes and Majors, single and two-color, to large cylinder presses. Everyday inks work equally well on all."

So writes a prominent Boston printer (name on request). He is just one of hundreds throughout the country who now use Everyday inks for everything—from black-and-white halftone printing to 4-color process.

Printers find they can match practically any color for commercial printing with standard Everyday inks.

The complete Everyday line consists of 25 regular colors, including process colors, blacks for every purpose, 3 whites (opaque, transparent and mixing), and bond and cover inks. Don't buy ink just any way, buy the modern, Everyday way.

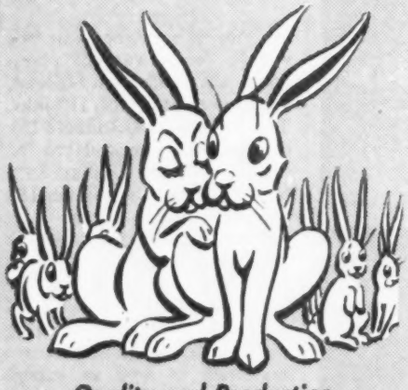
Advertisement

You can count on *Ideals* for a better deal all 3 ways —

Efficient and Economical

- ★ ***ECONOMY***
- ★ ***QUALITY AND PRODUCTION***
- ★ ***WASH-UP AND MAINTENANCE***

When your estimator figures on a job of printing, he does not put in the "down-time" on your press due to roller troubles. He does have in his overhead figures the cost of roller replacements, wash-up and maintenance.



Quality and Production

Do you know that with **Ideal** roller equipped presses you can keep "down-time" costs from turning your normal profits into a loss? And that the lowered costs of roller replacements and maintenance can shave your overhead figures so that you can better compete for the jobs on which you figure?

Easy to Wash Up

More important than these savings in actual dollars and cents costs, however, is the advantage of producing an enviable job of printing — with clear, true colors, at speeds which permit you to make deliveries on time or ahead of time. This amounts to an actual bonus for ***your*** customers!

Equip for this exceptional performance by ordering Ideals now.

IDEAL ROLLER & MANUFACTURING CO.

6069-6073 Maywood Avenue
Huntington Park, Calif.

2512 West 24th Street
Chicago, Illinois

21-24 Thirty Ninth Ave.
Long Island City 1, N.Y.

Send for "How to Conserve Your Rollers"

Newsday
OPS LAUNCHES WIDE BEEF CEILING DRIVE
Hint Reds Ready for Compromise
Sen. Cain Will Battle for MacArthur Report
Accused OSS Killers to Fight Trial in Italy

A 4-unit WOOD Press with Tension Plate Lockup is now in operation at the Newsday plant, Garden City, Long Island to produce Newsday, one of the fastest growing papers in America . . . with enough potential left over for circulation increases.

AMERICA'S FASTEST GROWING NEWSPAPER CHOOSES *WOOD Pressroom Equipment*

To secure maximum newspaper production in the shortest running time possible, Newsday's 4-unit press is fed and replenished by WOOD Standard Reels, Automatic Autopasters and Pneumatic Tensions . . . sustains continuous, high-speed production *throughout entire editions!*

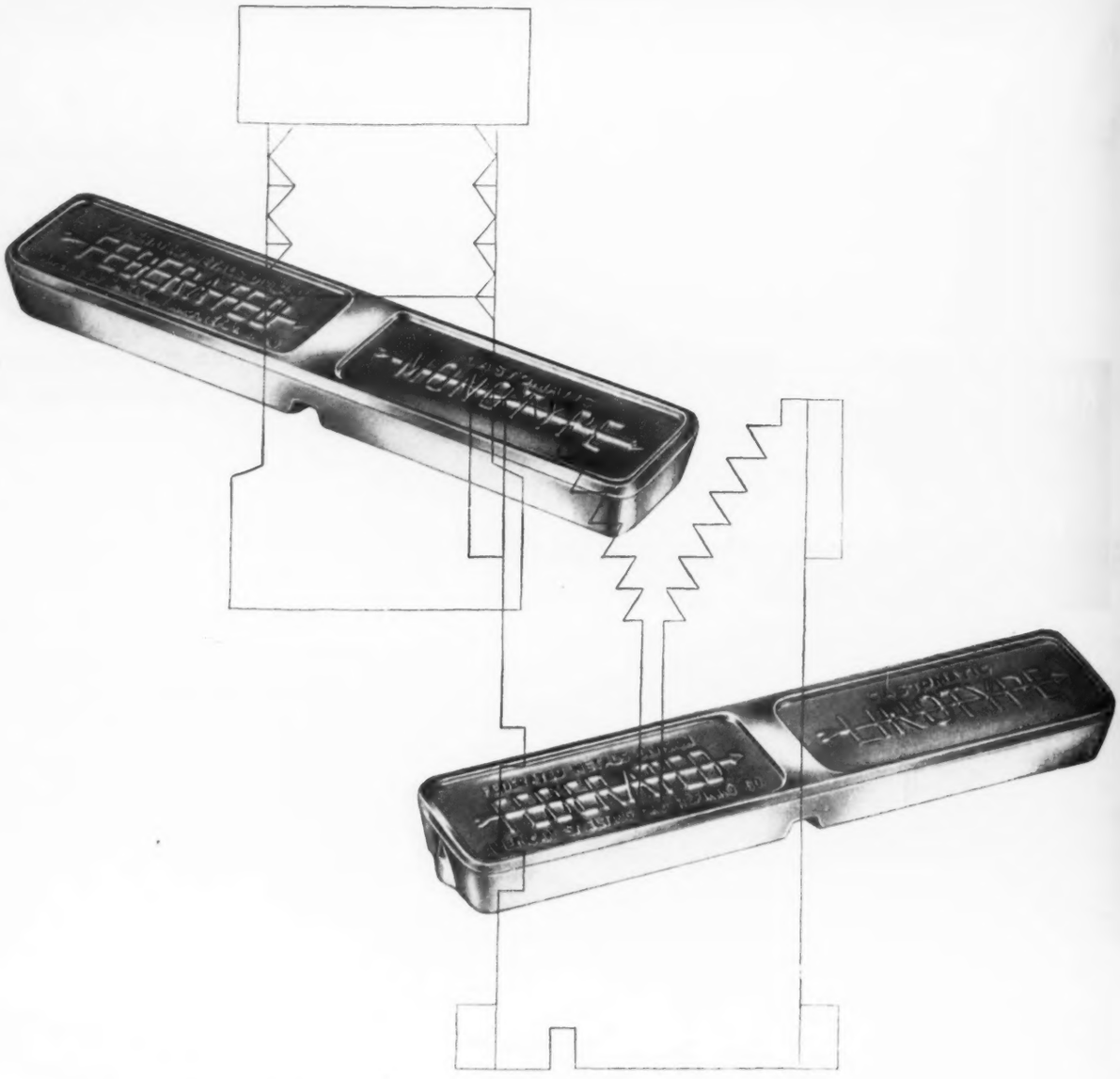
NOW IN OPERATION...

For newspapers like Newsday, the speed and versatility of WOOD pressroom equipment is a sure step toward economy. Why not for your publication?

IF IT'S Wood IT'S GOOD

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17



A New **TYPE METAL** that **CUTS MELTING POT DROSS...**

Federated Castomatic Type Metals are automatically cast on patented machines. The entire casting operation is completed under pressure. No air ever touches the molten metal. Therefore harmful oxides are excluded and you get *less dross in the melting pot.*

Orifices stay clean. Metal flows freely and machines operate smoothly, unhampered by the inclusion of dross in the metal.

Castomatic Type Metals are available in 5-lb. bars . . . in Monotype, Linotype, and MOR-TIN® replacement alloys.

To obtain further information or to order, call or write any of Federated's 22 sales offices across the country.

Federated Metals Division

Federated first in the new ferrous field IMD

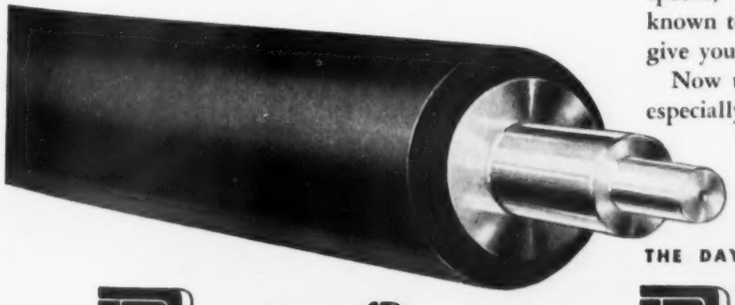
AMERICAN SMELTING AND REFINING COMPANY · 120 BROADWAY, NEW YORK 5, N. Y.

with non-stop, push-button printing

Faster, faster is the tempo of the presses in these days of big news. Can your rollers keep up without melting? Ever have to stop the presses to change rollers between editions, or between seasons? Then get the new Dayco Newspaper Rollers and neither tempo nor temperature will make any difference!

Daycos are the world-famous Roller that made push-button printing come true—just push the starter button and forget about rollers. Daycos handle black and white or color, in any position. They are practically unaffected by special inks, washup solutions, oils, acids, moisture. Diameter, shape and softness are unaffected by press speeds, weather, climate or season. Daycos have been known to outlast other rollers 3 and 4 times! And they give you daily color—deep, true, fast as the news.

Now that material shortages are with us again, it is especially important to equip your presses with Daycos—the rollers that will see you through. Remember—nothing rolls like a Dayco—for years and years!



THE DAYTON RUBBER COMPANY, DAYTON 1, OHIO

Dayton Rubber

PIONEERS OF IMPROVEMENTS FOR BETTER PRINTING

These glass-surfaced draws and blankets are cutting first impression offset for over 1700 newspapers.

Here's how to eliminate last-minute replating and "juggling" your make-up trying to find "preferred positions" for your advertisers. Put "SPHEREKOTE" Drawsheets or Blankets on your presses—cut offset and clean up those "muddied" first impression pages.

These drawsheets and blankets have a tough glass-beaded surface that gives clean impressions of type, solids and halftones.

That's why over 1700 newspapers have switched to "SPHEREKOTE" Drawsheets and Blankets! These papers report lower "make-good" costs, trouble-free runs—and millions of extra impressions. They're getting better printing, too, with no time wasted in the make-up and stereo departments favoring cuts and advertising.

Let us put "SPHEREKOTE" Drawsheets or Blankets on your presses. Our representatives will be glad to show you how to get better printing at lower cost—or, if you prefer, we'll mail sample swatches with complete information. Fill out the coupon today.

"SPHEREKOTE" Drawsheets, Blankets cut costs all over the plant	
Make-up	More preferred positions for cuts and advertising. Make-up moves faster, with fewer interruptions. Allows tighter papers.
Stereotype	No last-minute recasts to reposition ads or cuts which are picking up first-impression offset.
Press room	Fewer press stops for replating; no waste copies from first-impression offset.
Maintenance	Press packing with "SPHEREKOTE" Drawsheets in many cases lasts up to twice as long.
Ask for "SPHEREKOTE" Brand DRAWSHEETS—BLANKETS	

WRITE TODAY FOR COMPLETE INFORMATION!

Minnesota Mining & Mfg. Co., Dept. PEE-101
St. Paul 6, Minn.

Send Swatches and Price List ☐
Have representative call ☐

Name.....

Company.....

Address.....

City.....Zone...State.....

SPHEREKOTE
BRAND
DRAWSHEETS and BLANKETS

Made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives, "Sphere-kote" tympans and Friskets. General Export: Minn. Mining & Mfg. Co., International Division, 270 Park Avenue, New York 17, N. Y.

ONE OF A SERIES

It gave us all the Power to Think

Movable type in the hands of the fifteenth century German printer, Johann Gutenberg, helped kindle the democratic revolution.

For printing gave the people the power to think for themselves. Knowledge and its authority ceased to be the proud possession of a privileged few.

Shown above is a page from the First Book of Maccabees, appearing in the Gutenberg Bible . . . accepted as the first book printed from movable type.

In 1451, six presses working together profitably produced the Gutenberg Bible in ten sections. In 1951, the scope of printing has widened enabling ATF to offer the widest line of printing processes for better, more profitable printing.

AMERICAN TYPE FOUNDERS

Faces shown are: Bulmer, Lydian, Lydian Bold, Lydian Cursive and Lightline Title Gothic.

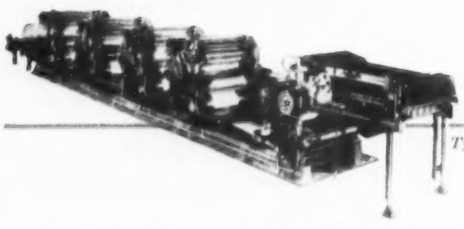
A press of this button

starts your profits rolling in

Switch on a high-speed, web-fed ATF-Webendorfer offset press and turn out production jobs in a hurry.

Webendorfer web presses can be designed to handle your largest, most complex multicolor printing—or your simplest. Cost is low, too. Four classes of web presses cover every type of work—publication, form work, web multicolor and specialty printing. Also, with separate units your Webendorfer web press easily folds, numbers, perforates, sheets, rewinds.

No matter what your offset production problem, your answer is in an ATF-Webendorfer. Contact ATF for the full story. AMERICAN TYPE FOUNDERS, *Webendorfer Division*, 2 South Street, Mt. Vernon, New York.



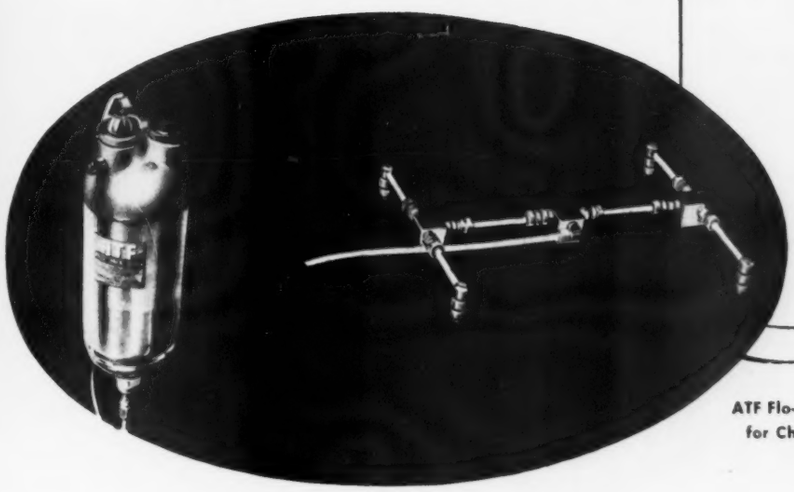
Type faces shown are: Century Schoolbook, Spartan Extra Black, Spartan Heavy and Spartan Heavy Italic.

ATF

BETTER, MORE PROFITABLE PRINTING FROM THE WIDEST LINE OF PROCESSES

GRAVURE . . . LETTERPRESS . . . OFFSET

Why let "Smudgy" put your profits in the wastebasket?



ATF Flo-Mix Non-Offset Unit
for Chief 29 Offset Press

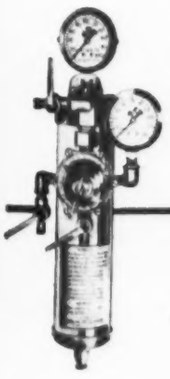
"Smudgy"—offset waste—shrinks your profits. Get rid of him and watch your profits grow and grow and grow.

You can do it, too, when you have an ATF Flo-Mix® Non-Offset Unit. For ATF dry powder units are individually engineered for *your* press, enabling you to deliver high quality jobs at full speed. They banish "Smudgy" from your pressroom.

Since an ATF unit is completely synchronized with your press, powder volume and distribution are carefully controlled for full sheet coverage. Powder is conditioned for climatic changes by an internal heating element. Elimination from the air line of moisture, oil and oil vapors, is assured by ATF's exclusive new design air filter. All in all, an ATF unit is actually *part* of your press—positive offset prevention for every printed job.

Ask your ATF representative which ATF Flo-Mix Non-Offset Unit you need.

AMERICAN TYPE FOUNDERS, 200 Elmora Avenue, Elizabeth B, New Jersey.



ATF

BETTER, MORE PROFITABLE PRINTING FROM THE WIDEST LINE OF PROCESSES...
GRAVURE... LETTERPRESS... OFFSET

Type faces shown are Lydian Bold Condensed, Bodoni Book, Bodoni Bold and Spartan Heavy.

Multiply your impressions

per minute

with an ATF

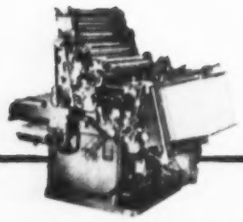
Chief Offset press

You can turn out a fine job—fast, with positive chain delivery—on an ATF Chief. For this press gets rolling quickly, runs steadily with a minimum of attention. It's precision-built to produce high quality work at low cost on long or short runs.

Three simple adjustments of accessible press controls quickly set your automatic feeder. Hair-line register control is just as easy. So is the form roller setting, ink fountain adjustment for accurate ink distribution control, and cylinder impression.

Ask your ATF representative how you can speed production, improve printing quality, and increase your profits with an ATF Chief.

AMERICAN TYPE FOUNDERS, 200 Elmora Avenue, Elizabeth B, N. J.

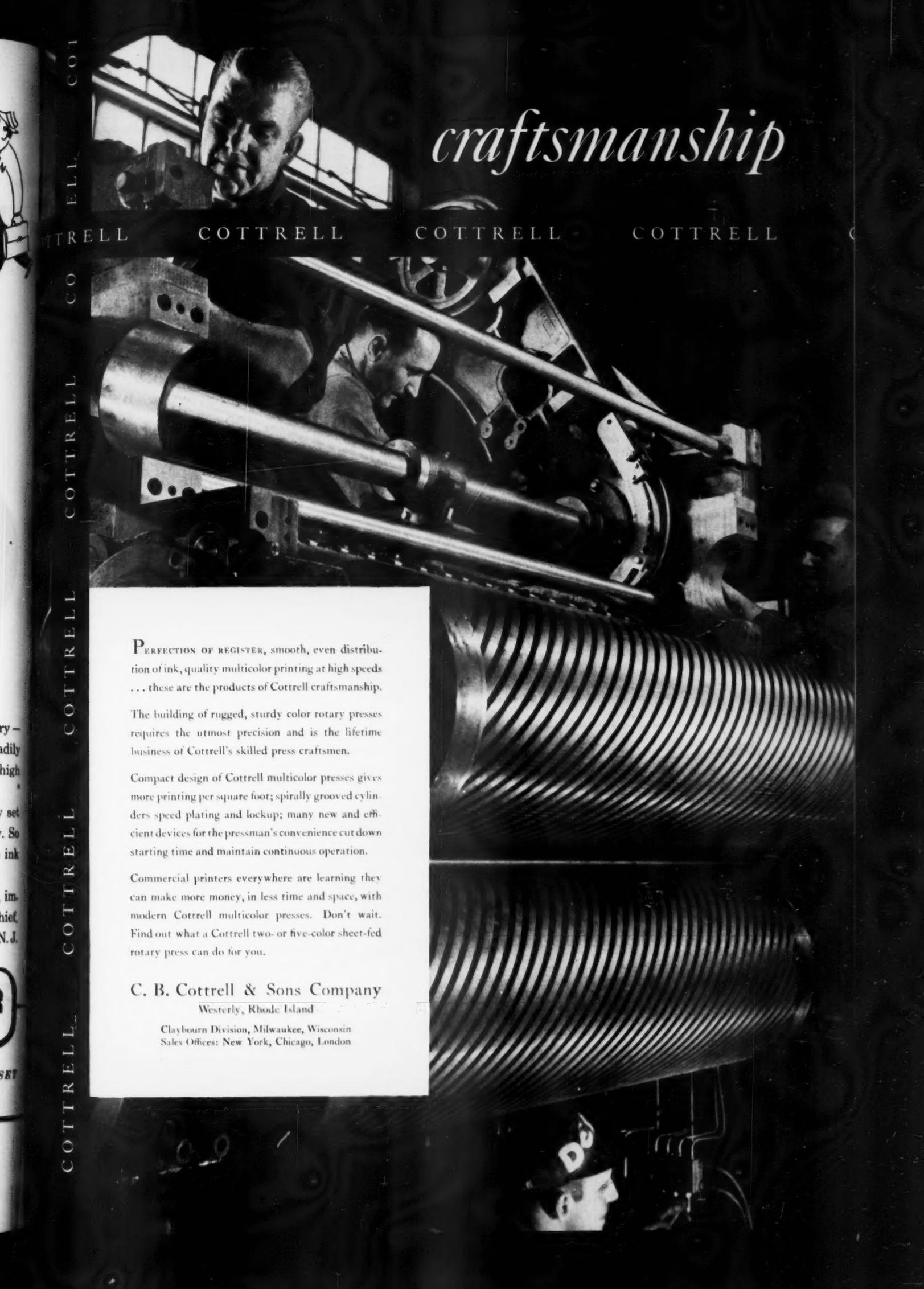


ATF

BETTER, MORE PROFITABLE PRINTING FROM THE WIDEST LINE OF PROCESSES

GRAVURE . . . LETTERPRESS . . . OFFSET

Type faces shown are: Century Schoolbook, Century Schoolbook Bold and Century Bold.



PERFECTION OF REGISTER, smooth, even distribution of ink, quality multicolor printing at high speeds . . . these are the products of Cottrell craftsmanship.

The building of rugged, sturdy color rotary presses requires the utmost precision and is the lifetime business of Cottrell's skilled press craftsmen.

Compact design of Cottrell multicolor presses gives more printing per square foot; spirally grooved cylinders speed plating and lockup; many new and efficient devices for the pressman's convenience cut down starting time and maintain continuous operation.

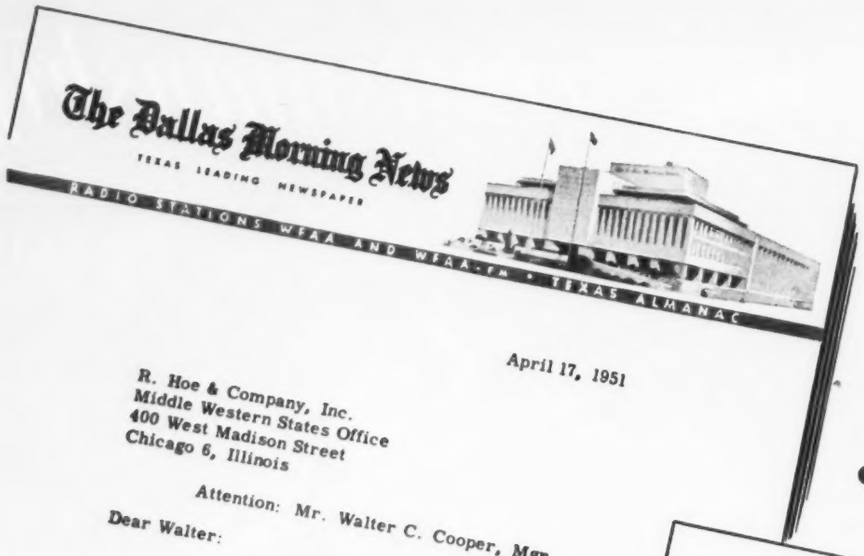
Commercial printers everywhere are learning they can make more money, in less time and space, with modern Cottrell multicolor presses. Don't wait. Find out what a Cottrell two- or five-color sheet-fed rotary press can do for you.

C. B. Cottrell & Sons Company
Westerly, Rhode Island

Claybourn Division, Milwaukee, Wisconsin
Sales Offices: New York, Chicago, London

AFTER TWO YEARS

of actual production


The Dallas Morning News
TEXAS LEADING NEWSPAPER
RADIO STATIONS WFAA AND WFAA-FM • TEXAS ALMANAC
OLDEST BUSINESS INSTITUTION IN TEXAS

April 17, 1951

R. Hoe & Company, Inc.
Middle Western States Office
400 West Madison Street
Chicago 6, Illinois

Attention: Mr. Walter C. Cooper, Mgr.

Dear Walter:

You should know our feelings after two years' experience with the Hoe Color Convertible Press. Our judgment has been vindicated as to the equipment needed to satisfy the trend toward color printing and still retain the facilities to produce black and white newspapers at high-speed requirements.

We have found that the arrangement of color couples on each of the octuples of our sixteen-unit line has afforded the greatest flexibility of color position with the minimum loss of capacity. With our arrangement of color couples here is a possible color position on any page in the paper--and we mean all three colors and its position. No one imagined the demand for color when we ordered the equipment. As a matter of instance, during the year 1950 we ran 445 color printings of which 70 were three colors and black; 89 were two colors, and 286 were spot colors. Such a number of individual ads and the many position commitments we have had, would naturally present problems. On occasions we have carried as many as seven color printings--three of them multiples--in one supplement.

Color has always caused a hesitancy on the part of press operators to run at production speeds. This has not been the case in the press room of The Dallas Morning News. Register being accomplished, we run at production speed with satisfactory results.

In newspaper production departments, it has been the rule and guide that if it were possible to take care of the more intricate and the heaviest demands, the ordinary jobs would fall into line. That being accomplished, it makes it hard to tell you of the normal black and white operation. The results we have had are so matter of fact, that when a black and white newspaper comes we feel like we are taking a night off.

We have found during these two years of operation that the power demand to run our presses has been well under the calculated horsepower, and this certainly gives a satisfied feeling of an economical operation as well as a reserve for any emergency. It's like having money in the bank.

The fact that we have experienced no delay in editions from press failures is a high tribute to the low maintenance cost of operation.

With kindest personal regards,

Sincerely yours,

THE DALLAS MORNING NEWS

Leven T. Deputy

Leven T. Deputy
Mechanical Superintendent

LTD:ja

R. HOE & CO., INC.

910 East 138th Street New York 54, N. Y.
BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO
BIRMINGHAM • PORTLAND, ORE.

Since 1948 THE DALLAS MORNING NEWS has been printed on a Hoe Color-Convertible Newspaper Press consisting of 16 units, 8 color cylinders, 4 double folders, and 16 Hoe reels, tensions and full-speed web-splicing mechanisms.

Now after two years' daily experience, Mechanical Superintendent Leven T. Deputy states that this Color-Convertible "has afforded the greatest flexibility of color position with the minimum loss of capacity."

He also emphasizes that additional color does not slow production, for "register being accomplished, we run at production speed with satisfactory results."

What Mr. Deputy says regarding the use of color is especially pertinent in view of the fact that during 1950 THE DALLAS MORNING NEWS carried 766,863 lines of R.O.P. color advertising, ranking fourth in this respect among all the newspapers in the country.

Miami Daily News gets accurate register at 4700 or 3850 ft. per min. chain speeds. Six 100 hp motors are connected through individual Link-Belt Silverstreak Silent Chain and two-speed Herringbone Gear Drives.

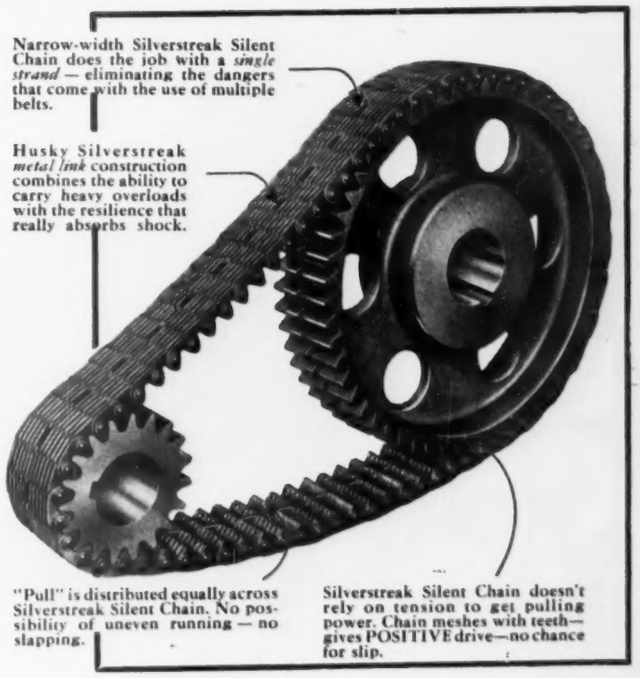
Pioneer high-speed newspaper press drives still running strong after 11 years

LINK-BELT Silverstreak Silent Chain helps Miami Daily News get accurate register, trouble-free operation

On Jan. 2, 1940, what was then the world's fastest newspaper press began printing the Miami (Fla.) Daily News. Today it's still in use—without a single replacement on its Silverstreak Silent Chain Drives.

And today you'll find Link-Belt Silverstreak Silent Chain doing an efficient, low-cost job on the majority of all high-speed, high-horsepower presses. That includes not only newspaper—but magazine and rotogravure presses as well.

For complete information, call the Link-Belt office near you. And for better, lower cost printing, make sure your next press is driven by Link-Belt Silverstreak Silent Chain.


Narrow-width Silverstreak Silent Chain does the job with a *single strand* — eliminating the dangers that come with the use of multiple belts.
Husky Silverstreak *metal link* construction combines the ability to carry heavy overloads with the resilience that really absorbs shock.
"Pull" is distributed equally across Silverstreak Silent Chain. No possibility of uneven running — no slapping.
Silverstreak Silent Chain doesn't rely on tension to get pulling power. Chain meshes with teeth—gives POSITIVE drive—no chance for slip.

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How Do You Know

n You Makeup on a Galley?

p Gauge—You Don't Guess

rified for *size* under correct
ure—instead of depend-
ge and finger pressure.

r *lift* under lockup
ompositors cannot
akeup on a galley.

ied for *squareness* under
up pressure—instead of

ed for *line-up*—under
pressure—instead of
pon inaccurate rule-of-
surements.

rified for *register*—not ap-
but exactly, and under
up pressure.

Looking down on the Vandercook 68 Makeup Gauge, this view shows the precision makeup chase, the two micrometer scales, two pressure bar levers, impression cylinder and space cases. Minimum page capacity is 23x27 picas, and maximum page capacity 60x80 picas.

g Room Foremen!

. . .

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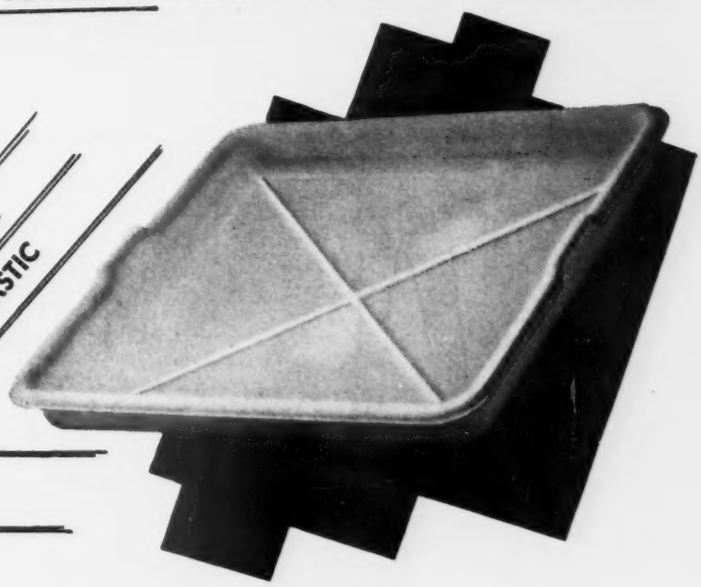
Largest Producer of Proof Presses and other Pre-Press Equipment for Letterpress, Offset and Gravure

this CHEMCO PLASTIC TRAY

TWO WAYS MORE SERVICEABLE THAN STAINLESS STEEL!

THREE WAYS MORE SERVICEABLE THAN PORCELAIN ENAMEL!



	STAINLESS STEEL	PORCELAIN ENAMEL	CHEMCO PLASTIC
LOW COST		YES	YES
LIGHT WEIGHT			YES
CHIP-PROOF	YES		YES
CORROSION-PROOF	YES		YES

It's easy to see from the comparative "box-score" . . . *here's a darkroom tray that will give you more service at less cost than any other tray on the market!*

The Chemco Tray is solid, one-piece plastic . . . absolutely corrosion proof to all photographic processing and plate making chemicals of operating strength. There's no coating to chip and pave the way for rapid corrosion as with porcelain trays! And in the large, 20 x 24 inch size, shown in the illustration, the Chemco Plastic Tray weighs only three pounds ten ounces.

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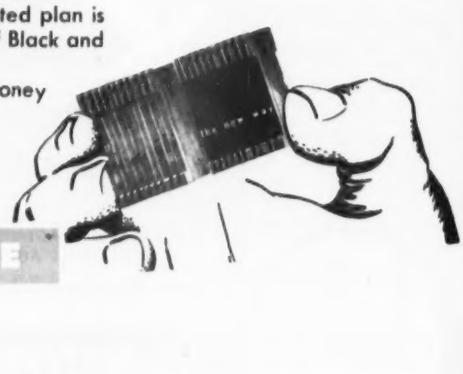

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PRINTING
EQUIPMENT
Engineer
October 1951

Front entrance to the Sherwin-Williams printing plant situated in North Olmsted, O. Architecture of the building and landscaping conform to the surrounding beauty of the suburban area.

Fine New Printing Plant For Sherwin-Williams Co.

By EDWARD H. OWEN

A BRAND-NEW one-story plant with much new equipment, valued at over $600 thousand was placed in operation recently under the supervision of Printing Division, Sherwin-Williams Co., in North Olmstead, O., (a Cleveland suburb). This is the behind-the-scenes story of the move from its old plant into the new quarters, and the production techniques and equipment employed in its operation.

The parent company of the Printing Division is one of the country's leading paint manufacturers. In its printing plant are produced millions of labels, stationery, office forms, and advertising pieces necessary to a business conducted on a national level.

So extensive are the Sherwin-Williams Co.'s requirements for printed material that over $1 million worth of printing is contracted for annually with commercial plants throughout the industry. Most of this farmed-out work is printed by four-color offset. It includes advertising catalogs, booklets, pamphlets and miscellaneous items. Perhaps one of the biggest jobs produced by outside commercial plants is the annual Sherwin-Williams Style Guide containing one hundred 16 in. by 20 in. pages of four-color process illustrations showing interior decorating suggestions for the homemaker. This Style Guide is printed by letterpress, in an edition of 75 thousand copies each year for distribution to the firm's retail branches and sales offices.

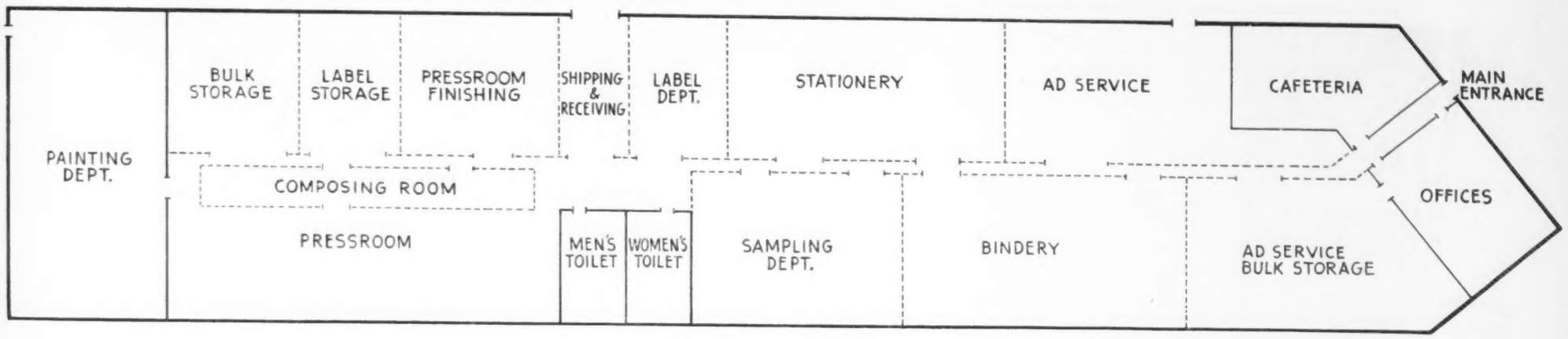
Moving any printing plant from its old location to a new site is usually a case of where the firm has simply outgrown its former facilities and requires more floor area to meet its production requirements. The letterpress plant formerly was housed in six separate buildings in a heavily congested industrial area of Cleveland known as the Flats.

ROBERT E. WEBER, Superintendent, Printing Division, Sherwin-Williams Co.

The North Olmsted property on which the new plant was erected formerly was the site of a laboratory area belonging to the Sherwin-Williams Co. Though it lacks a railroad siding, it is accessible to major trucking routes for receiving materials and for shipments of printed matter.

Executing the Move

The task of moving equipment the 18 mile distance was supervised by Robert E. Weber, Superintendent of the Printing Division. Weber and his executive associates considered the amount of detailed planning necessary for the move and the importance of minimizing lost production time. He appointed one man to act as liaison between himself and the cartage company to supervise the moving operation. In this manner, one person was in constant touch with the movers and could present an accurate, up-to-the-minute picture of the status of the move at any time. This delegated author-



Departmental Layout of Sherwin-Williams Co.'s New Letterpress Plant Valued at Over $600 Thousand

This key floor plan has been reproduced to enable the reader to better comprehend the overall arrangement of the various departments at the Printing Division, Sherwin-Williams Co., and to visualize the size of the Composing Room and Pressroom in relationship to the remainder of the plant. The new building housing the Printing Division covers 70,000 sq. ft. of floor space and measures 120 ft. wide by over 550 ft. long. Lot line for the one-story, brick building drops 7 ft. from the front of the structure to the rear. Workflow starts at the rear of the plant in the Composing Room, Pressroom and Painting Departments and moves toward the front to the various departments where the finishing operations are performed. The central location of the Shipping and Receiving Dept. may perhaps be confusing to some readers who maintain that the correct place for this department is at the end of the fabricating operations. Theoretically this is true for it achieves the much sought after straight line workflow. However, at the Sherwin-Williams Co. plant, a goodly amount of floor space must be devoted to storage of printed labels, stationery items and advertising pieces. These must be ready for shipment to the firm's 550 retail stores, factory points, warehouses and divisional sales offices throughout the country on quick notice. Hence, the location of the Shipping Dept. in relationship to the areas devoted to this storage. It also enables quick and easy transfer of paper stock to the pressroom upon receipt. The Ad Service Dept., which handles the thousands of advertising pieces printed at the plant, has facilities of its own for shipment of this material as it is needed. This prevents movement of printed matter backwardly halfway through the plant to the regular Shipping Dept. Much of the work produced at the Printing Division requires only a trimming operation after it has been printed. To shorten the workflow and to relieve the bindery of congestion, a special department called Pressroom Finishing has been set up next to the shipping area. This enables swift movement of such material across the aisle from the Pressroom for immediate shipment or storage in one of the designated areas. A 6 ft. wide aisle runs the entire length of the plant for uninterrupted movement of material by electric trucks and skids.

ity relieved Weber of the hundreds of minute details which arise in a move of this kind.

In the early stages of the moving operation, Weber had to know how much time would be required to load a semi-trailer truck on which would be moved the equipment and materials to the new site. To determine this, Weber's liaison man timed the test loading of the type truck to be used for the move. The length of time it took to drive to the new plant and how long to unload was also observed and noted. This information provided Weber with the number of trucks that could be loaded in a certain period.

In order to minimize disruption of production operations at the old plant, all materials were moved at night on week days and machinery was taken out over the weekend. A total of 145 semi-trailer truck loads was required for the actual move which was accomplished in a five-week period.

Identifying Equipment

To speed up the move and to assure that each machine went to the proper space set-aside for it, each piece of equipment was tagged and numbered. The corresponding numbers for the particular machine were marked on the floor of the new plant in the exact location for the equipment. This minimized confusion and aided the movers in placing the machine quickly. The only production time lost was in waiting for the machines to be wired at the new plant.

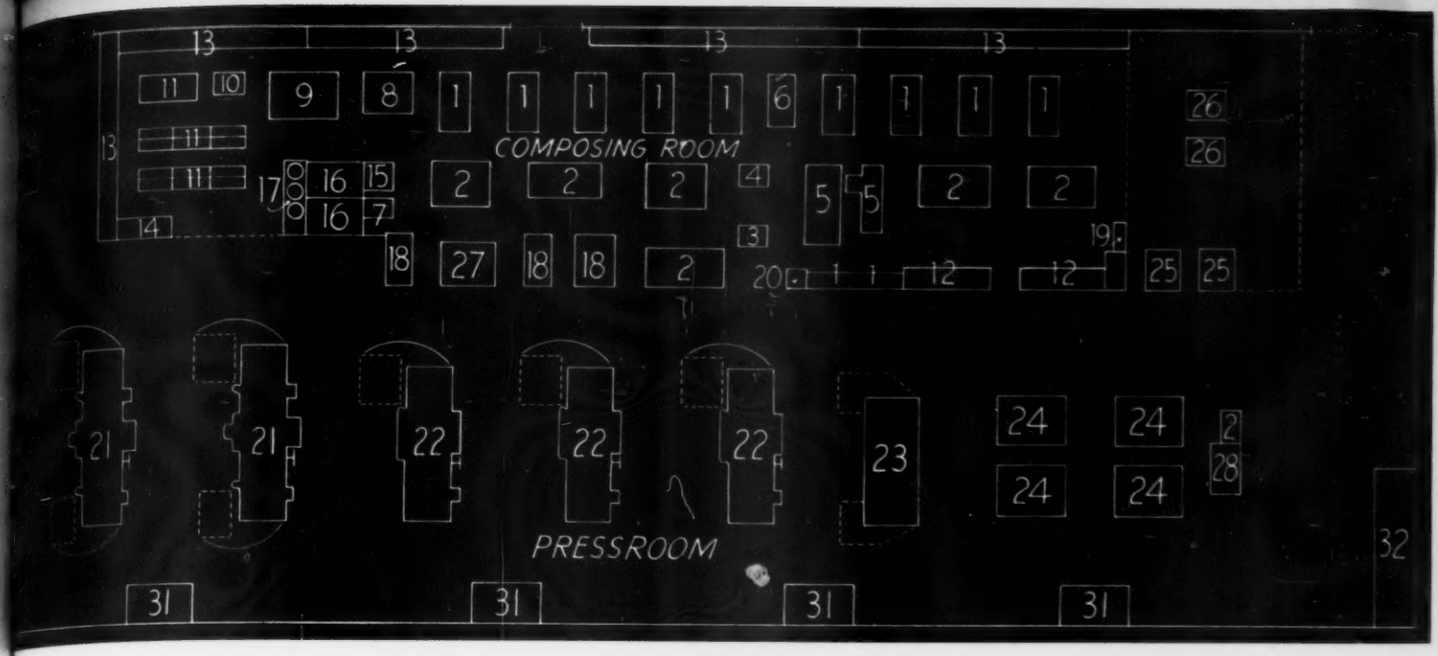
The pressroom created no problem for the Sherwin-Williams movers. New presses replaced the equipment used in the old plant. These were installed when the pressroom was completed and were ready for operation as soon as the other departments moved in their equipment. However, it was decided to curtail operations in this department for three weeks while a period of press instruction was carried out for the benefit of the pressmen by Miehle and Miller representatives.

Planning the equipment layout for the new plant entailed close cooperation between the production staff and the individual departmental foremen. Each department was dealt with separately, with Weber and the department foreman working out the details necessary for the move. Twenty percent was added to the dimensions of each department's floor space in the old plant to determine the floor area in the new building.

Templates and cardboard cutouts, scaled to ¼ in. equalling 1 ft., were used in the planning operation. Inasmuch as the complete plant layout of this scale amounted to a layout several feet long, it was dissected into individual departments to permit ease in handling.

Ample Aisle Spaces

Executives of the Sherwin-Williams plant considered the necessity for ample aisle space for uninterrupted movement of materials within the plant. The layout of the plant permits 6 ft. wide main aisles which carry the greatest bulk of the work from one department to another and are the main routes for the plant's



Composing Room and Pressroom Equipment Layout at Plant of the Printing Division, Sherwin-Williams Co., Located at North Olmsted, O.

Composing Room

1.—Type Cases
2.—Imposing Tables
3.—Composing Room Saw
4.—Mitering Machine
5.—Proof Press
6.—Proofreaders Table
7.—Beveler
8.—Form Table
9.—Sorting Table
10.—Cut Storage Rack
11.—Galley Racks
12.—Plate Cabinets
13.—Steel Bins
14.—Steel Storage Cabinet
15.—Furniture Rack
16.—Chase Racks
17.—Scrap Metal Drums
18.—Foremen's Desks
19.—Plate Cabinet
20.—Slop Sink

Pressroom

21.—Miller 27 in. by 41 in. Two-color Presses (dash lines indicate position of feeder and delivery when open)
22.—Miller 27 in. by 41 in. Single-color Presses (dash lines indicate position of feeder when open)
23.—Miller 21 in. by 28 in. Two - color Press (dash lines indicate position of feeder and delivery when open)
24.—Miehle V-50 Vertical Presses (feeder open)
25.—Gordon Platen Presses
26.—Davidson Offset Presses
27.—Line-Up Table
28.—Combination Imposing Table and Form Rack
29.—Press Packing
30.—Ink Cabinet
31.—4 ft. by 7 ft. Tables
32.—Air Compressor
33.—Filter
34.—Olson Heater

In the Composing Room of the Sherwin-Williams Printing Division plant, three significant operations in addition to the scores of other work allotted to such a department are carried out. Monotype and foundry type is kept on hand for label imprinting and miscellaneous short run jobs. The department also locks up all forms for the adjacent Pressroom on six imposing tables located in the Composing room. Because the greatest percentage of work in the Pressroom is printed from plates, ample space must be provided in the Composing room for storage of the plates after the press run. Much of this work is of a repeat nature necessitating quick location of the plate for the re-run.

Six Miller and four Miehle cylinder letterpresses (all new) are the principal production machines in the Pressroom. The new Miller presses are positioned with the delivery ends facing toward the windows permitting a northwest exposure. This aids the pressmen in obtaining color matches when color work is being run. The presses are also arranged to provide ample working areas around each press and sufficient room to bring in stock for the feeder and remove it from the delivery. The key for the equipment designated in this plant is listed above.

workflow. Secondary aisles range in width from 4 ft. to 5 ft., but are still wide enough to permit movement of material by the electric trucks used in the Printing Division. The equipment used in each department has been spaced to provide ample working areas for the employ

Supervisory Personnel

Unlike other letterpress printing plants, a variety of operations are performed by the 170 employees of the Sherwin-Williams plant. These operations are divided into a number of departments in charge of the individual foremen. In addition to Mr. Weber, the production and mechanical staff includes: R. C. Mack, Assistant Supt.; R. F. Schlenkerman, Production Mgr.; James Skala, Composing Room Fm.; C. P. Obenauer, Pressroom Fm.; Paul Zauner, Bindery Fm.; C. M. Priebe, Shipping Dept. Fm.; Bertha Hotovy, Sampling Dept. Fm.; O. L. Sebring, Painting Dept. Fm.; A. M. Swinglish, Finishing Dept. Fm.; Carl Miluk, Label Dept. Fm.; H. L. Schill, Stationery Dept. Fm.; and John Melcher, Advertising Service Fm.

Kinds of Work

Work performed in the plant includes the printing of over 3000 different stationery items for Sherwin-Williams' 550 retail branches, factory points, warehouses and divisional sales offices throughout the country. The Printing Division also prints and imprints labels, color cards, booklets, catalogs, and miscellaneous advertising features for Sherwin-Williams and its affiliated companies.

The Plant Building

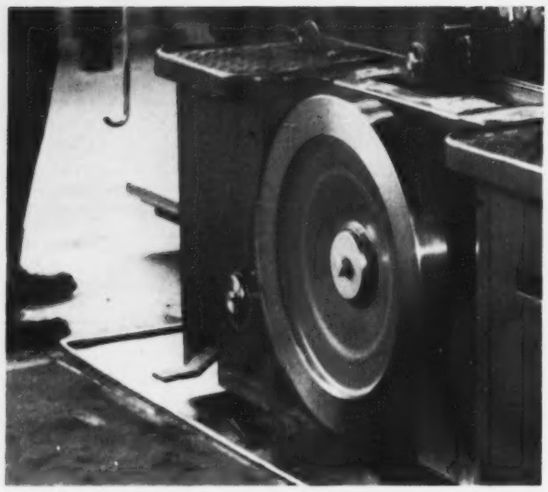
The new building housing the Printing Division, which covers 70,000 sq. ft. of floor space, is 120 ft. wide by over 550 ft. long. Lot line for the brick constructed building drops 7 ft. from the front of the structure to the rear. Actual construction took approx. 1 year.

The inside color scheme in the various departments includes ivory painted ceilings trimmed in dark green. The dark yellow tile walls comprise a smart contrast to the ceiling color combination. Concrete floors are used in every department with the exception of the offices at the front of the building. Here the floors are covered with plastic tile.

The building itself is heated by gas with the heating equipment designed for conversion to oil in the event of a gas shortage. Reznor Unit Heaters have been strategically located throughout the plant, especially near the entrances, where possible air pockets or cold spots may occur in the winter months.

Exhaust fans located in the rear of the building provide the plant with 12 complete changes of air every hour. Air which enters at the front of the structure, is drawn into the plant and out through the exhaust units.

The plant is lighted by fluorescent fixtures equipped with Slimline and 4 ft. long fluorescent tubes. Six rows of these lights are spaced 20 ft. apart across the width of the building. The layout of the plant was designed so that the delivery



A safety factor in the pressroom at the Sherwin-Williams printing plant is the sheet metal oil pan upon which each press is mounted. The pans were specially designed with rolled-over edges (to prevent crushing when stepped on) on all four sides to catch and hold any oil drippings from the press. They confine the excess oil to a definite area and prevent the lubricant from spreading out onto the floor where a worker may slip on the slick surface. When any amount of oil from the press accumulates on the pan, the pressman simply wipes it up with a cloth. The oil pan is shown here installed beneath one of the department's Miller cylinder presses.

ends of all six Miller cylinder presses face the northwest in order to obtain an accurate check on color jobs. Acoustical ceilings have been installed in all the offices.

In constructing its Printing Division's new plant, Sherwin-Williams didn't neglect the needs and comfort of the employees who run the machines and carry out the numerous operations. A cafeteria has been provided for the workers equipped with kitchen, tables, chairs and culinary equipment. Ample space for employee parking has also been provided along side the new building. Locker and wash rooms for employee convenience are incorporated in the new plant.

A firm believer in employee benefits for faithful service, the company sponsors insurance, disability and pension plans. Workers are entitled to a total of three weeks vacation with pay after serving 20 years. A program of sports which include baseball, bowling and basketball, is also promoted at the Printing Division as are several employee clubs.

Expansion Provisions

Twenty percent of the present floor area within the plant has been allowed for growth and expansion when production calls for new equipment. To keep up with present production demands, two of the departments are operating on a double shift basis.

Because of the variety of specialized operations performed in the Sherwin-Williams printing plant, it would be difficult for a visitor to be sure where operations begin to turn out the thousands of color samples, stationery items, labels and other printed matter. Not unlike other printing plants, all jobs commence in the production offices and are guided throughout the shop under the watchful eyes of the alert production staff.

Production Control

To facilitate the production flow and to keep an accurate check on each job moving through the plant, a production book listing each individual job is circulated through each department every morning. Spaces are provided in this book for the individual department foreman to enter the status of the jobs his department has in process.

The looseleaf type book contains ruled sheets measuring 19 in. by 12 in. These pages are divided into several sections according to the general nature of the individual job. For example, if the job is one of the more than 3000 office forms printed for the Sherwin-Williams Co., it will be entered in the stationery section. This aids in promptly locating a job in the production book when someone

Departmental Views in New $600 Thousand Sherwin-Williams Co. Printing Plant, North Olmstead, O.

1.—The major portion of space in the Composing Room is devoted to storage of plates for the Printing Division's presses. Steel racks for accommodating this storage can be seen in the background running the entire length of the department. Some of the type cases and six imposing tables used in the department are also noticeable in the picture. Rubber mats cover the concrete floor in the work aisles for the safety and comfort of the employees. Composing Room Foreman James Skala is shown at right inspecting a job on one of the imposing tables.

2.—The four new Miehle V-50 Vertical presses shown here in the Sherwin-Williams pressroom, help turn out the thousands of stationery items, labels and advertising pieces. Each Vertical press is mounted on the specially designed oil pan with rolled-over edges illustrated and described elsewhere in this story. The back-to-back arrangement of the delivery end of these presses permits the best concentration of overhead lighting in this area and enables one pressman to quickly check the color on another press should that pressman be occupied at the feeder or fountain of the machine. It also facilitates rapid unloading of the delivery hoppers on all four presses onto one skid which can remain in one position.

3.—A most interesting operation in the Painting Dept. is the application of Sherwin-Williams paint to a paper web which is later cut up into samples of the particular paint advertised. The machine shown here is used for applying the coating of paint to the paper by means of power-driven rollers. As the continuous moving web receives its paint coating, it moves onto a paper festooning rack measuring 45½ ft. long upon which the 24 in. wide web is dried. Visible at the left in the picture are the loops drying on the rack. Each loop is spaced 5 in. apart during the 24 hr. drying process. After the long lengths of paper are thoroughly dry, they are cut into 24 in. by 38 in. sheets. From each drying rack, 980 sheets of this size are obtained. One of the Anemostats used for circulating the air during the drying process can be seen at the top of the picture. These air circulating units spread the air throughout the room at the rate of 1000 cu. ft. of air per min. as the painted sheets are being dried.

4.—Located back-to-back in the Press Finishing Dept. are these two new 50 in. Seybold Paper Cutters. Printed sheets are brought directly to these cutters for the trimming operation directly from the plant's pressroom on paper skids and rolling tables. This department was organized to handle only work which entailed trimming and cutting operations. Such an arrangement shortened the workflow lines within the plant and relieved the bindery of the congestion so often caused by just such work. It enables swift movement of printed material across the aisle from the pressroom, which is located on the opposite side of the building (See accompanying Plant Layout), for immediate shipment or storage in one of the designated areas.

5.—View of the spacious bindery at the Sherwin-Williams printing plant in which are performed the numerous finishing operations. In addition to three stitching machines, round cornering machines, paper drill, paper punch and padding racks, the department is also equipped with four Baum and one Anderson folding machines and a new 40 in. Seybold Paper Cutter. More than a dozen gathering tables occupy floor space in the room for use in the various hand operations. Visible in the background is the type of steel shelving used throughout the Printing Division for storage purposes. The shelving in use in the entire plant totals approx. 100 T. of steel. The overhead fluorescent lighting which illuminates the bindery is part of a uniform lighting system used throughout the building. Six rows of the same type of fixtures are spaced 20 ft. apart across the width of the plant.

6.—One of the two New Jersey Automatic Chipping machines used in the Sampling Dept. for applying color samples of Sherwin-Williams paint to color cards. Already die-cut into color chips by a die-cutting press in a previous operation, this automatic machine will attach a set of 24 chips to a card at the production speed of 1200 sets per hr. The chips are picked up individually and simultaneously from the bottom of the stacks by suction cups at the feeder end of the machine (not shown in picture). As the complete set of 24 color chips is carried forward by a square plate upon which the suction cups are attached, it is transferred to an identical plate in the center of the machine. This plate passes the set of chips over a revolving glue roller where each chip receives a coating of glue on the unpainted side. The plate continues to move forward until it is positioned over the already printed pile of color cards. Movement of the plate holding the 24 color chips is then downward, making contact with the card on the top of the pile. The chips are automatically positioned in their pre-determined spaces and are attached by pressure exerted from the plate. The suction is now released freeing the chips and the operator removes the completed card by hand from the hopper as shown in this picture.

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wishes to learn the status of a particular order. Other sections of the book contain entries of label, color cards, and advertising literature jobs.

The individual sheets in the production book contain ruled spaces for the following information: Date job is entered in the book; Job number; Quantity; Number of forms for the particular job; Complete description of the job itself; and the Date wanted. Still more space is to be used for entries by the composing room, pressroom, bindery, painting and sampling departments. The composing room foreman enters the date the job was started in that department, proof out, proof returned, revise proof out and when returned, and the date the job was finished. The pressroom foreman records the number of the press the job is being run on, as well as when it was started and finished. The bindery, painting and sampling departments likewise note the date started and when finished.

After the production book has made its daily circuit of every department within the plant, it is returned to the production office. Here the department's executives note the progress being made on every job within the plant and can quickly ascertain whether the order is keeping abreast of the predetermined schedule. Immediate steps can be taken to compensate if the job falls behind. After the book is returned, Weber also notes the status of the work in the plant to obtain a picture of the production situation.

To obtain more detailed information on each job within the plant, each departmental foreman submits a daily report to the production office recording the operations and progress of every job within his particular department. For example, the pressroom foreman lists the number of impressions already run on a certain job, tells whether another is in the makeready stage, notes if a press has broken down, etc. This production control method bolsters the value of the production book and gives the production staff a picture of the status of each job.

Production Meetings

A production meeting, similar in nature to those held in other printing plants, is held twice a month. Here, Weber meets with the plant's production and mechanical executives to review all phases of production for the past half month. If a problem was encountered in any of the work, ways and means of overcoming it are sounded out. The status of each job within the plant is also discussed.

Minutes of each meeting are typed on 8½ in. by 11 in. paper and mimeographed for distribution. Each foreman in the plant receives a copy as do all affiliated companies of the Sherwin-Williams organization. Listed are the number and description of every job, quantity of the order, remarks which consist of the department working on the job and its status in that department, and the date it entered that particular department.

Composing Room

Most of the work performed at the Printing Division has its beginning in the Composing Room. All machine composition is contracted for from outside companies and electrotypes are made from these forms for the presses. If the press run is to be exceptionally long, the electrotypes are nickel plated. The type cases contain Monotype and foundry type which are kept on hand for label imprinting and miscellaneous short run work.

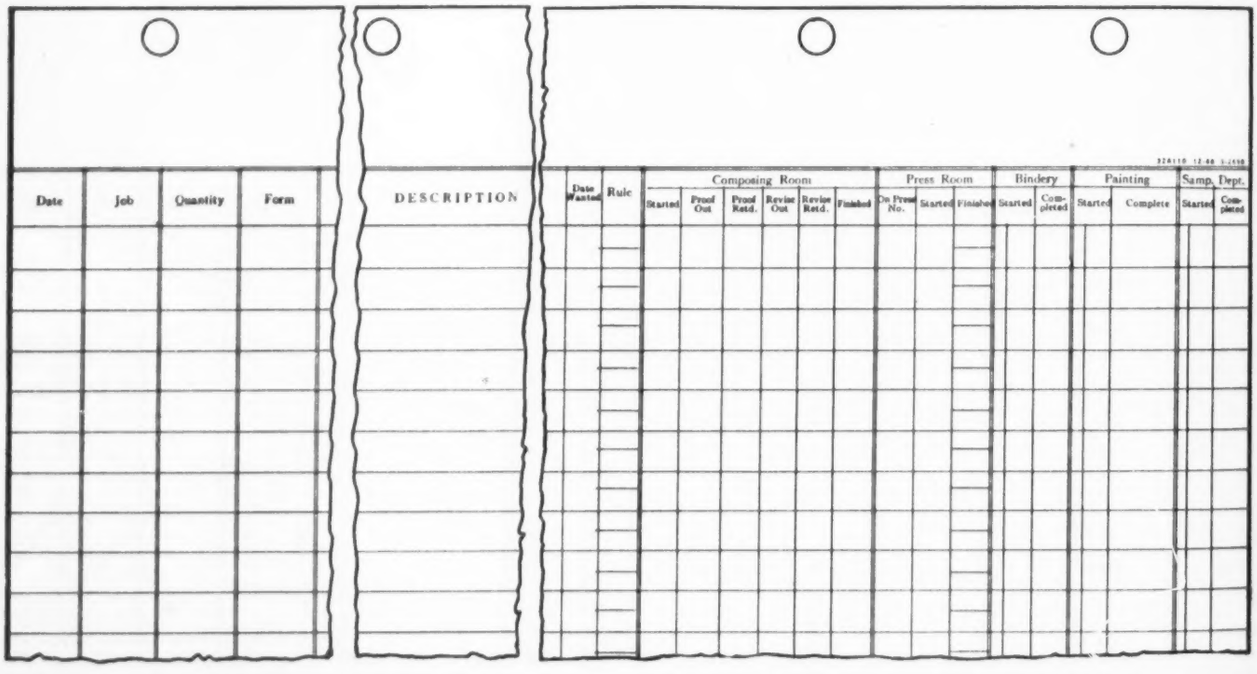
Much of the work done in the Sherwin-Williams printing plant is of a repeat nature, necessitating ample storage space for plates and miscellaneous forms. Galley racks and plate cabinets are located within the composing room to accommodate this storage. Forms for the presses are locked up on one of the six imposing tables. Because of the location of this department in relation to the pressroom, it is a convenient matter to store the chases with the locked-up forms in a chase rack in the composing room until needed on the presses.

Two proof presses, miterer, saw, beveler, table comprise the other major equipment items. Three drums are provided for scrap metal.

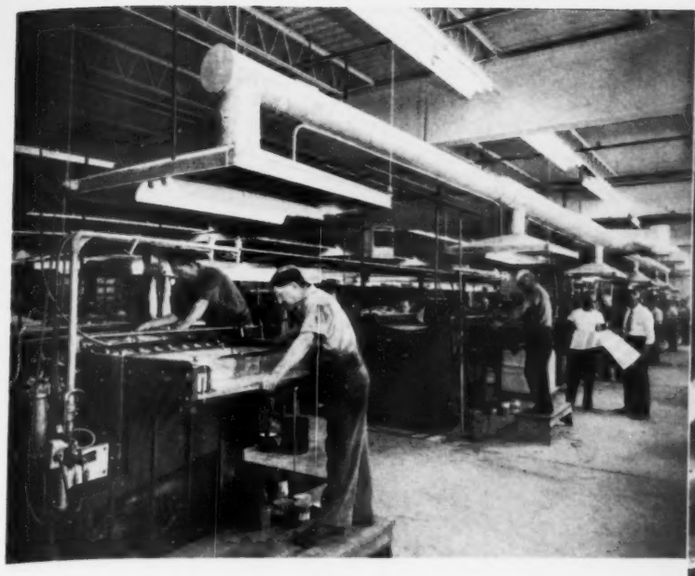
The Pressroom

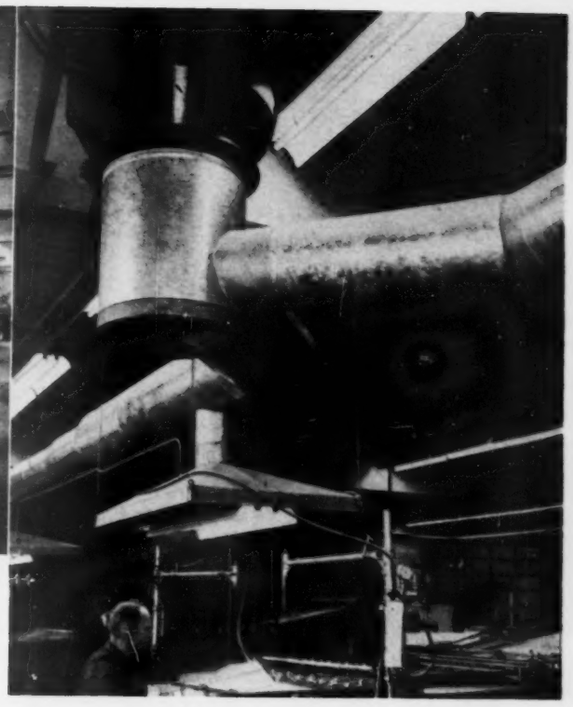
The pressroom is equipped with six new Miller cylinder letterpresses. Of these, two are Miller 27 in. by 41 in. Two-Color, three are Miller 27 in. by 41 in. Single-Color, and one is a Miller 21 in. by 28 in. Two-Color. These replaced seven presses used in the old plant. Four new Miehle V-50 Vertical presses have also been installed, replacing six old Verticals.

All presses are equipped with ATF, Devilbiss or Frazier non-offset guns,



Miniature reproduction of a page from the production book used in the Sherwin-Williams printing plant to keep an accurate daily check on each job moving through the shop. The actual sheets measure 19 in. by 12 in. and are divided in the book into several sections according to the general nature of the individual job. As is evident by the sample shown here, spaces are provided on each page for the individual department foreman to enter the status of the jobs his department has in process. The book, listing every job in process, is circulated through each department in the plant every morning. After its daily passage through the plant, the book is returned to the production office where the production executives note the progress being made on every job. This enables them to determine quickly whether the order is keeping abreast of the schedule allotted for it. It also indicates the status of the particular job in the plant when an inquiry is received concerning that job.





Pressroom Exhaust System

At left is shown the exhaust system installed in the pressroom of the Printing Division, Sherwin-Williams Co., to relieve the department of the fog created by excess spray of powder from the offset guns on the presses. To alleviate the condition, an exhaust system was designed which draws off the excess spray of powder by suction and carries it out of the plant. As shown in the illustration, a hood has been placed over the delivery end of each of the six Miller cylinder letterpresses in the pressroom. These six hoods are connected to an 88 ft. long duct through which the spray is exhausted. A fluorescent lighting fixture equipped with two tubes has been installed directly beneath the hood but clear of the suction pipe, for illumination of the delivery hopper. Such an arrangement permits the pressmen to inspect the color on work being run through the press from the delivery end without having to expose themselves to excess spray from the offset guns. In the left plate, R. C. Mack (right), Assistant Supt., and C. P. Obenauer, Pressroom Foreman, are shown examining a press sheet. The right-hand photo shows a close-up of one of the hoods, as well as the exhaust unit to which the entire system is connected. A 7½ h.p., a.c., motor operates the unit through which the spray is exhausted upwards through the ceiling and outside from the roof of the building. The diameter of the pipe is graduated so that the intake is the same at each hood. Each hood has an intake of 500 cu. ft. per min., while the velocity of discharge on the roof of the building is 3000 cu. ft. per min.

When operations first began in the pressroom of the Sherwin-Williams plant, floating powder particles from the offset guns on the presses created a fog which clouded the entire department. To relieve this condition, an exhaust system was designed to draw off the excess spray and take it out of the plant. A hood has been placed over the delivery end of each Miller press. These six hoods are connected together by a large main duct which carries the spray outside the building.

A noticeable feature in the pressroom is the oil pans upon which each press is mounted. These were specially designed for this department of the Sherwin-Williams plant with rolled-over edges (to prevent crushing when stepped on) on all four sides to catch and hold any oil drippings from the press. It has been found that oil pans of such design are a great aid to plant safety. They confine the excess oil to a definite area and prevent spreading out onto the floor where a worker may slip on the slick surface. These oil pans extend beyond the limits of the press approx. 3 or 4 in. When any amount of oil from the press accumulates in the pan, the pressman simply wipes it up with a cloth.

Roller Washup Equipment

A company-designed roller washup rack is another useful device in the pressroom. Mounted on casters, the pressmen can move the rack from one press to another. This rack is used in the washup operation on all the department's 27 in. by 41 in. Miller presses. The rollers are laid horizontally in notches on each end of the rack for washing. Here again, a rolled edge drip pan is fastened to the base of the rack to catch the drippings.

A round iron disk is used for the washup operation on the 21 in. by 28 in. Miller press. Measuring approx. a foot in diameter, a number of holes have been drilled around the outer rim of the disk. The rollers are placed vertically in the disk by inserting the cores in the drilled holes. The pressman is then able to wash each roller as it stands in vertical position.

A tracing booth for preparing stabbed sheets for a press overlay has also been designed and built. The wood frame is covered with heavy dark green cloth and is equipped with a table, the surface of which is set on an angle with a fluorescent fixture mounted at the top. This casts light across the surface of the stabbed sheet to show the pressman the high and low areas in the type form.

Adjacent to the cylinder pressroom is a section containing two Gordon hand-fed platen presses and two Davidson offset presses which are used for small, short run work. Two imposing tables and a form rack are located near the Miehle Verticals for the convenience of the pressmen. Work tables have been placed at other locations throughout the pressroom for use by the pressmen.

Paint Coating Machines

One of the interesting operations in the Printing Division takes place in the Painting Dept. where heavy paper is either rolled or spray-coated with the various color paints manufactured by the Sherwin-Williams Co. The coated paper is cut up into oblong or square chips in another department for gluing to the color cards which you look at when you want to buy paint.

The painting machine area of the roller coating department is fitted with equipment measuring 45½ ft. long for festooning paper upon which 24 in. wide lengths of roller-coated paper are dried. The coating is applied to the paper by an automatic machine equipped with power-driven rollers which move the paper along 2 in. rails at the front of the drying racks. Each loop on the rack is spaced 5 in. apart during the 24 hr. drying period. After the long lengths of paper are thoroughly dry, they are cut into 24 in. by 38 in. sheets. From each drying rack, 980 sheets are obtained.

On the other side of the room in the Painting Dept., an area is devoted to spray coating sheets with Sherwin-

(Continued on Page 94)

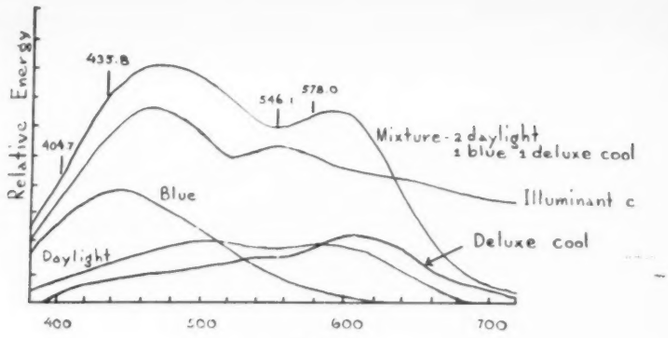


Fig. 1.

Pressroom Illumination

By PHILIP E. TOBIAS*

**Research Engineer, Edward Stern and Co., Inc., Philadelphia. Paper presented at a meeting of the Technical Association of the Lithographic Industry, Columbus, O., May 8, 1951. TALI is now known as the Technical Association of the Graphic Arts Industry and is an industry-wide technical association.*

IN LINE with our quality control program, a statistical study showed that there appeared, frequently, a variation in printing results between the night and the day shifts. These differences varied in magnitude with a definite correlation to ink color and stock. Qualitatively, these differences appeared as—first, a variation in ink volume, the night result generally being somewhat excessively inked as compared to the daytime OK sheet; and, second, an apparent inability to accurately judge color values of reds, browns, and red-toned blacks at night.

This situation was studied and, as might be suspected, the underlying cause for these observed variations was found to be pressroom illumination.

The lighting arrangements used in the offset and letterpress rooms were consistent with good industrial lighting practice, and were based on the use of two and four-tube standard industrial fluorescent fixtures, so arranged that the general illumination level was about 35 foot candles, and the level on the viewing tables about 50 foot candles. In general, one of the two-tube units was suspended over each of the pressroom viewing tables. The tubes used in these fixtures were the standard 4500 deg. white fluorescents.

Independent Factors

The day-to-night variations that were noted were found to be the result of two independent lighting factors.

The first factor was the color of the light source and its spectral distribution. This factor affects the apparent color of the object being viewed and, as will be shown later, can even affect the relative match between print and copy as obtained under different illuminating conditions.

The second factor was the position, spatial distribution, and brightness of the lighting units which, combined, resulted in surface reflections from the press sheet to the eye of the viewer. This caused the improper evaluation of color density or ink volume, the effect of surface glare being equivalent to desaturation of the color being viewed.

In considering the first factor it would be well to review one or two concepts that are in general use.

It is not uncommon to see references to light sources in terms of the color temperature. For example, a 6500 to 10,000 deg. K is equivalent to north sky illumination ranging from overcast to clear. Thus, 2900 deg. is the color temperature of an incandescent lamp, 4500 deg. that of a fluorescent, supposedly corresponding to mid-day sunlight, etc. It has frequently been assumed that the color temperature is a sufficient means for completely describing the color and distribution of white light. This is true, however, for only black body type of radiation. That is, if the radiation is that of a theoretical black body (or, practically, an incandescent source) the spectral distribution is completely defined by the color temperature, or conversely, the color temperature may be obtained from a ratio of intensities in two different portions of the spectrum. These intensities are generally measured in the red and the blue. Unfortunately, this is not the case for any radiation other than black body. Thus, fluorescent type lighting is not black body in distribution. Even a mixture of two black body radiations of different color temperatures will not result in a black body product. For example, a mixture of skylight and sunlight does not have black body distribution. This point is being made to emphasize the fact that in considering the color quality of a source of illumination, the distribution of the component wavelengths is the important characteristic, rather than the color of the source to the eye or, to a less accurate degree, the so-called color temperature.

Optimum Problem Light Source

Now let us consider the problem of the optimum light source for pressroom illumination from the standpoint of color distribution for color matching. Basically, color matching is generally covered by either: (1) The matching of colors which are spectrally identical and (2) Matching of colors which are spectrally dissimilar. This first type of matching for example, is generally done by a textile dyer, using a tremendous array of dyes, which he may blend to approximate the spectral reflectivity of his sample. To determine the closeness of this spectral match he must either determine the distribution by spectrophotometric means or else less accurately, see the closeness of visual match under bluish white and reddish white illuminants. It is obvious that spectrally identical colors will match under any type of illumination.

The second type of matching is the one which generally concerns the printer. By the use of three process inks, he obtains a mixture which he tries to match to a

seemingly infinite number of pigments and dyes which are supplied to him in the form of copy. It is then certain that, although a match is obtained, it almost never will be a spectrally identical match to the copy. This, at present, makes for a beautiful cause for confusion, between printer, agency, artist and, I guess I should include the ink maker. If two colors differ spectrally, a match may be obtained for one observer under one type of illumination. Vary the illuminant and/or the observer and the match may be non-existent. In practice, the artist may work under north light—overcast or clear, fluorescent, tungsten incandescent, sunlight or possibly, if his temperament dictates, candlelight. The printing buyer may view the printed result by any one of these light sources; the printer in turn may do the color correction and the printing under even different lighting conditions—the situation indeed looks completely insoluble. To some degree the problem would be resolved if it were possible to standardize on a source of illumination which would be used by both customer and printer. I hope that this may eventually come to pass.

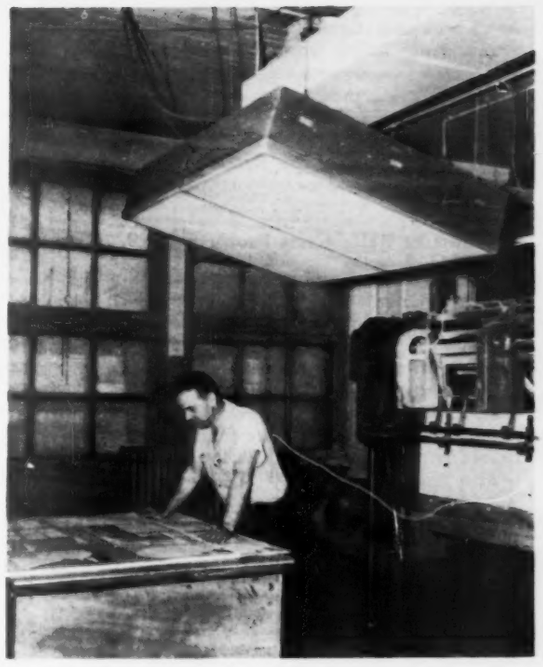


Fig. 2.—Final design of diffuser light source for inspecting printed sheets for color matching in pressroom of Edward Stern and Co., Inc., Philadelphia. Diffusing sheet is Plexiglas.

Use of OK Sheet

There must also be considered a form of color matching which is also involved in pressroom operation, which may be of either of the previously mentioned types of matching. This is, the running maintenance of color to a value as given by an OK sheet. Here press running conditions are involved and their effect upon hue, saturation and brilliance of the color. For instance, the amount of water being run on a lithographic press can cause a hue shift in a brown ink. The illumination requirements for this type of match, which may be the most frequent type of match encountered in a pressroom, is that the spectral distribution of the light gives the maximum acuity for detecting small differences in various colors.

First Specification for Color Illuminant

Miss Nickerson, of the U. S. Dept. of Agriculture, made a statistical study of color matching, which indicated that a color temperature in excess of 6500 deg. is best liked by textile color matchers and gives the best overall results for matching spectrally similar colors as measured photometrically. Therefore, our first specification for the color of our illuminant was that the equivalent color temperature be in excess of 6500 deg.

Determining Illuminant

The available types of illumination were as follows: Filtered tungsten, which gives an excellent match to north light, the distribution being good, similar to a black body, but the amount of light which is filtered out to achieve this result is extremely great. The efficiency, therefore, is extremely low. The initial cost of such fixtures, as well as operating costs, along with increased load on the air conditioning in the pressroom (the required load being in excess of the conditioner capacity), did not warrant the use of this type of illumination.

This left the possibility of the use of a mixture of fluorescent tubes. Examination of a typical fluorescent spectral curve, Fig. 1, showed a more or less continuous curve resulting from the emission of the phosphor, superimposed upon which, are lines resulting from the emission of the mercury vapor in the tube,—corresponding to the strong blue and green light generally associated with mercury vapor lamps. These are only indicated on this diagram and, of course, will influence the appearance of any object when viewed under this light. It should again be emphasized that the color temperature alone is no criterion of the light source, if it is not a black body radiator as would be generally the case only if the source were incandescent. Thus, two light sources may appear to the eye to have the same color but may not be spectrally alike and, consequently, an object viewed by these two lights would show a color difference. Until recently, fluorescent lighting had the serious disadvantage of being deficient in the far red. About a year ago, however, a line of so-called Deluxe tubes had been developed which has utilized a phosphor fluorescence in the far red. The color of the Deluxe cool lamp appears to be the same as the 4500 deg. white or as it is now called, the Standard cool. However, the presence of the red component will show a startling difference in the rendition of reds and browns. Unfortunately, the lack of red in the standard line of fluorescents has been overcompensated in the Deluxe line, so that relatively, reds appear to be excessively saturated when viewed by this light alone. This effect, while aesthetically pleasant, is too great for critical evaluation of color—

In this work, it must be remembered that there is no perfect light source. Inasmuch as the pigments of the copy and the reproduction are generally different, a match can be obtained only for one type of illumination. A suitable source would be one that is most probably like the light being used by the printing buyer and it should be, if choice permits, of a distribution and color temperature which would allow accurate evaluation of small differences in color. The previous pressroom lighting system, using standard 4500 deg. fluorescents, was too deficient in red to allow the proper evaluation of colors such as deep reds, browns, and red-toned blacks. This was a practical example of the old saw about all cats in the dark being gray. With the new Deluxe fluorescent alone, one would overcompensate for the red deficiency. It was therefore necessary to consider a mixture of lamps which would give an integrated result more similar to some common form of illumination.

Compromise with North Light

The results of Miss Nickerson's work on the optimum color temperature for color matching indicated that under practical conditions, the color temperature of the illumination should not be less than about 6500 deg. K, or equivalent to slightly overcast north sky. The use of warmer light than this appears to result in reduced color acuity in the expert matcher. Using the spectra available for various light sources, a combination of two daylight lamps, one blue and one Deluxe cool, gave a curve which roughly approximated 7000 deg. or overcast north sky. The presence of the narrow mercury vapor lines was not readily evaluated graphically, and so a unit containing a mixture of these lamps was compared, using various colored copy with overcast north sky (about 6800 deg. K), and found to be quite close. It must be remembered that exact duplication of north light of this color temperature was not necessary, inasmuch as our

objective was to obtain a light source which we could standardize upon for use in our plant, which would be relatively inexpensive, satisfactory for color matching or observing press inking conditions, and which would not be too far off from some conventional form of illumination. In the final design of this lamp, we felt that we had obtained such a compromise.

Surface Reflectivity Problem

The second factor which is responsible for day to night variations, mentioned previously, that of physical distribution of the source of illumination, was found by observation to operate generally, under most sheet viewing conditions. However, it was found that a viewer unconsciously adjusts for the surface reflectivity by tilting the sheet until the surface glare is at a minimum. This is relatively easy when the sheet being viewed is fairly small and illumination comes from a single small source. But larger sheets are incapable of being held so that the entire sheet receives a uniform distribution of light, which is all reflected away from the eye. This difficulty increases with a multitude of bright sources of illumination.

If the surface of a sheet being viewed is perfectly diffuse, the angle of view and the angle of incidence is of relatively no importance. The amount reflected back into the eye would be almost independent of the viewing angle or the angle of incidence. As the surface becomes more smooth, the sheet behaves increasingly like a mirror until finally most of the light incident to the surface is reflected at exactly the same angle from the perpendicular.

The presence of some diffuseness increases the range of angles over which some glare is being reflected back into the eye. Thus, for a large sheet of paper and a number of light sources it is almost impossible to view the sheet without obtaining areas of moderate glare which appear to be reductions of ink density. A smooth surfaced paper, such as a coated sheet, will reflect so much light at the critical angle that glare is quite obvious and is generally not misinterpreted but can be extremely annoying. There is, then, an intermediate degree of diffuseness of the paper, which can result in a subtle amount of glare under ordinary sheet viewing conditions, which is conducive to improper evaluation of the printing quality and may not readily be detected by the viewer. This was found to be the primary cause of ink volume variations that were observed between day and night shifts.

Day and Night Differences

In the daytime, the source (generally used for viewing sheets) was daylight (north, east, west or south, skylight and sunlight) with little use being made of the commercial fluorescent fixtures. While certainly variable in color, the light coming in through frosted wire glass windows supplied a preferable light from the point of view of physical distribution. Generally, therefore, the light source was of low brilliance and of a large area, and thus the glare was essentially eliminated. At night it was necessary to depend upon the two-lamp fixtures (4500 deg. fluorescent) directly over each pressroom table. Under these viewing conditions no practical adjustment of sheet angle could be found which would eliminate glare from some portion of a 38 in. by 50 in. sheet. With the diffusivity of an antique offset stock, this glare was unnoticed and in order to compensate for what appeared to be a lack of color density, the inking frequently was increased beyond that run during the day. It is interesting to note that this resulted even when a sheet was OK for color during the day and merely maintenance of density to match this OK sheet was required at night. This disparity could be explained either by the relative position of the OK sheet on the table during the run, or from the natural inclination of the pressman to correct (especially on black and white) what was apparently a washed-out print, the OK sheet notwithstanding.

There are two ways of eliminating this effect. First: to have a single point-like source (necessarily of high brilliance) so arranged that the source is not reflected into the eye.

This gives very bad shadows, poor distribution over the sheet; it also requires proper placing relative to the viewer, *i.e.*, over the shoulder, and does not allow for color mixing, and in general is not a practical solution. As the light source becomes greater in area, there is less tolerance in position, and more and more positions of the sheet will specularly reflect some light to the eye of the viewer.

If the total amount of light from a large area source is to equal the total light from a small source, it is obvious that the brilliance of the former can be quite low, roughly varying as the inverse of the ratio of the areas. A given spot on a sheet could only reflect specularly a small area of the large source, which would represent a small percentage of the total amount of light reaching the sheet from the entire source. This effectively reduces glare and in the ideal case the light source should be a ceiling and walls of light, the brilliance of which would only be slightly greater than that required of the sheet being viewed.

Designing the Fixture

In designing a satisfactory light, we were forced to compromise with this ideal. Because of the illumination level elsewhere in the pressroom and the large expanse of white paper generally being viewed, it was determined that the incident illumination level on the table should not exceed about 65 foot candles. If possible, the brightness ratio between the highest and lowest brightness areas should not exceed 3 : 1. For color adaptation it was found desirable to use daylight fluorescent tubes for general illumination of the pressroom. The intensity required at the viewing table was obtained by using an eight 40 w. tube source in a fixture which we designed and built. This fixture incorporated a diffusing sheet of plastic (Plexiglas 122-75-¼ in.) which was very much superior to ground glass in diffusing characteristics and low absorption. The overall size of this diffusing surface was 4 ft. by 6 ft.—24 ft.². The projected area of the bare tubes was 4.0 ft.². The resulting brilliance of the diffuser was then about 17% that of the individual bare tubes. The tubes were located 7 in. apart about 6 in. from the diffuser to give very good diffusion with relatively little loss of light. These fixtures were mounted above the viewer, overlapping the front of the inspection table 1 ft., and tilted so that the front of the fixture was 98 in. above the floor and the rear 86 in. above the floor, the table being 35 in. high. This resulted in shadowless, glare-free illumination which varied only slightly from the front to the back of the table.

The final design of this lamp is shown in Fig. 2. There are in all, eight tubes, four to a box; the sequence used is as follows: daylight, Deluxe cool white, blue, daylight. In the next box, the sequence is repeated. The diffuser frame is hinged to allow rapid changing of burned out tubes. The unit was made for us by a local fixture manufacturer, at a rather nominal price.

Since these lighting units were installed in our pressrooms, and our color department, the day to night variations appear to have disappeared and the pressmen, color artists and other operating personnel have been enthusiastic about the comfort and accuracy of viewing with this type of illumination. While this is not suggested as being the ultimate in pressroom illumination, it has proved an inexpensive and satisfactory solution to a serious, and, I am certain, a widespread, problem.

Combustion Equipment

A COMPACT and comprehensive bulletin in which are illustrated and described the complete line of McKee-Eclipse Burners, Mixers, Valves and Blowers used in Gas Combustion for industrial purposes, has been published by Eclipse Fuel Engineering Co. One page is devoted to Gas and Oil-Fired Steam Boilers and Furnaces for the process industries. More detailed bulletins are available on each product, for those interested in specific equipment. When requesting this bulletin, please mention PEE No. 193.

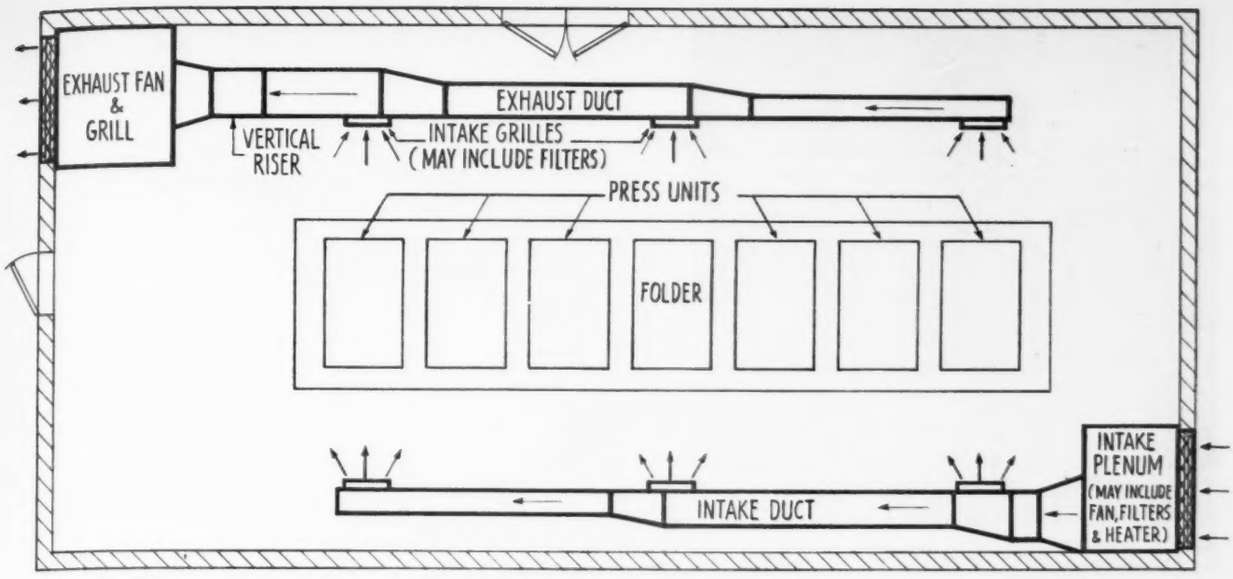


Fig. 1.—Schematic diagram showing plan of pressroom in which Method No. 2 of ink mist control is used

Control of Ink Mist in Printing Pressrooms

By H. EARLE RUNION*

Runion Production Engineers, Louisville, Ky.

AIR pollution in buildings housing newspaper rotary printing presses has always been a problem that seemed to defy solution. Ink mist emitted by the press inking rolls readily finds its way into the room when open type presses are used. Even with the newer partially enclosed units it leaks out through the various openings in the enclosures.

Carbon particles in the mist are sticky because of the oil used as a vehicle, and readily attach themselves to any surface upon which they impinge. Lint, or paper dust particles in particular, form a convenient nucleus for the growth of a globule of dirt. Soon the walls, room fixtures, and presses are coated with it. Problems of building ventilation are complicated by the fact that air in the pressroom is so contaminated it cannot be allowed to escape to the remainder of the building or, in some cases, even to the outside.

Previous attempts to cope with the problem have not been successful. The ink mist has always been allowed to escape into the pressroom and then attempts made to recapture it. Combinations of hoods, ducts, blowers, and filters have been used with varying degrees of success, but once the ink mist has escaped, it cannot be prevented from depositing upon objects in the room.

Before describing the Runion ink mist control system, we shall describe the methods used heretofore to alleviate pressroom air pollution. We have arbitrarily numbered them as methods 1 through 5 for convenience of discussion.

Method No. 1

Method No. 1 might be termed the brute force method, since its operation is dependent entirely upon the passing of large amounts of air through the room so as to keep the ink mist diluted. A high-capacity fan is used to handle the air. The incoming air is heated, and possibly filtered, then it passes through the pressroom. Here it picks up some of the ink mist present, and carries it in suspension to the fan, where it is blown outside.

This method is relatively ineffective from a cleaning standpoint. Because of

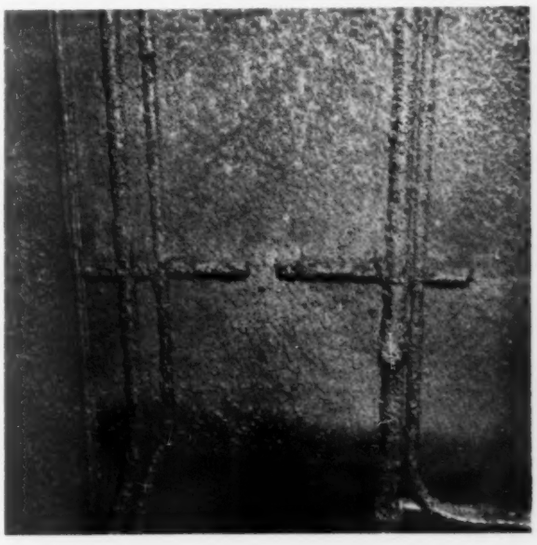


Fig. 2.—View of section of inside wall of a vertical exhaust duct such as is used in Method No. 2 for ink mist control.

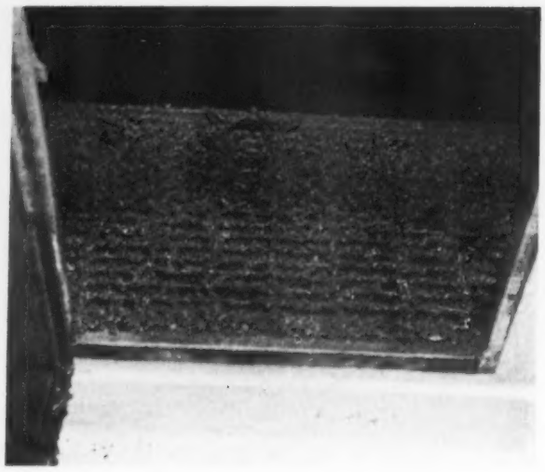


Fig. 3.—View of a horizontal ledge at bottom of riser duct shown in Fig. 2. This is in connection with the use of Method No. 2 ink mist control.

the large volume of air required, it is expensive to operate since all of the incoming air must be heated in the winter and, in some cases, cooled in the summer. Also, the exhausted air may be difficult to dispose of. It will discolor any surface it strikes and builds up a coating of sludge that is a serious fire hazard. The pressroom air generally is changed often enough to reduce the ink mist concentration but it by no means reduces it enough to keep the room clean.

Method No. 2

Method No. 2 uses ductwork to convey the air from an intake plenum to the pressroom, and from the pressroom to the exhaust fan (See Fig. 1). Filters may be placed at the inlets to the exhaust duct. This method allows control of the points at which the fresh air is introduced, and where the exhaust air is picked up. Thus the room air currents can be caused to do the most good by sweeping across the press area. If the proper filters are used at the exhaust grills they keep the exhaust duct clean and filter the air discharged from the building.

This system, too, requires the handling of large volumes of air and, accordingly has the inherent disadvantage of Method No. 1. If filters are used, it is possible to recirculate a part of the filtered air and thus reduce the heat loss, but it is not generally done with the filters heretofore available. The maintenance cost of keeping the air filters operating properly is likely to be quite high. When the filters are allowed to get too dirty the air flow will be reduced, and the effectiveness of the system impaired. If no filters are used, the exhaust duct will soon become fouled up with muck (See Figs. 2 and 3). Disposal of the contaminated exhaust air is also a problem.

The cleaning effciency of this method is slightly better than Method No. 1, but it will reduce the ink mist concentration only about 50-60% for the volumes of air ordinarily used.

Method No. 3

Method No. 3 is similar to Method No. 1 except that filters are used at the exhaust fans to clean the exhaust air and render it suitable for discharge outdoors. Here again the ink mist is allowed to escape into the pressroom, and then attempts made to recapture it.

One large newspaper using this system has four 10,000 c.f.m. exhaust fans mounted over the presses near the pressroom ceiling. Each fan is fitted with a pair of filters at the inlet. The fans exhaust directly outdoors, no provision being made for recirculation. The filters are American Air Filter Co. Auto-Airmat units. This unit, which is also used on the Runion system, is described later.

The exhaust air is effectively cleaned and is blown out the front side of the building without any smudge collecting on the building. The ink mist concentration in the pressroom is reduced by about 60%, there being a remaining concentration of from two to three grains of solid material per 1000 cu. ft. of air. This concentration is far more than is desirable, and will soon leave a film of ink mist in the pressroom.

Method No. 4

Method Number 4—In this method is used an air washer to clean the air drawn from the pressroom. One Texas newspaper has installed this system. There is a pit containing a sprinkler system into which the air is drawn and washed. One difficulty has been the precipitation of ink mist on equipment in the vicinity of the pit. Here the concentration is high because all the air from the pressroom converges and tends to leave a film on nearby walls and equipment.

The system has not been widely used. It suffers from the disadvantage of the previous systems in that the ink mist is first allowed to escape into the pressroom and is then collected.

Method No. 5

Method Number 5 is a system used by Runion engineers on older press installations where it is not practicable to build enclosures for the press units. A typical installation is shown in Fig. 4. Air is drawn from the pressroom into the two Auto-Airmat filters which are mounted

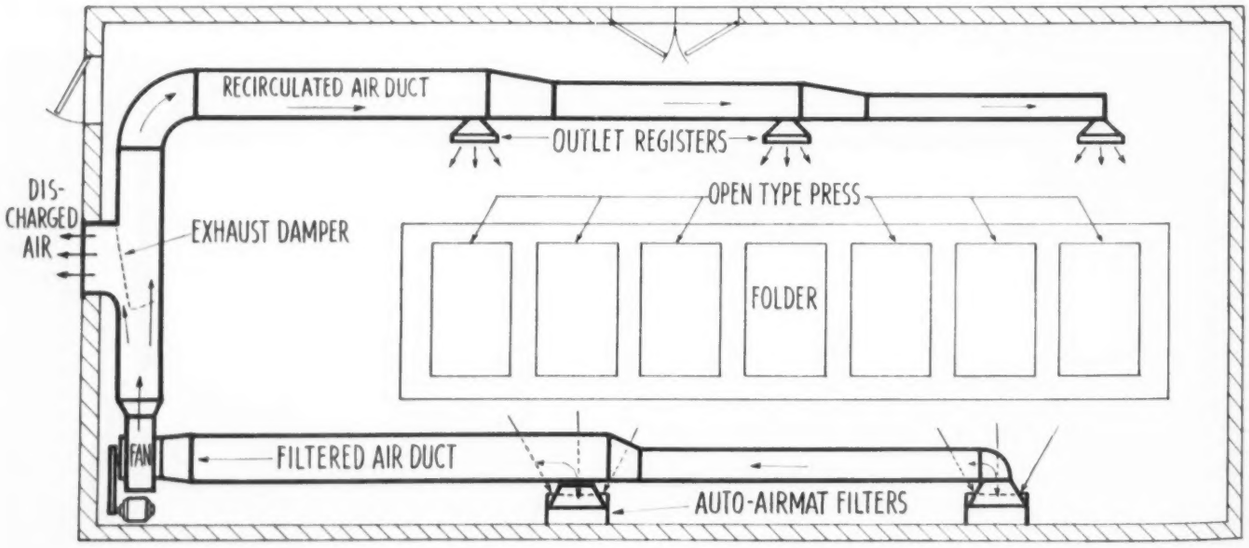


Fig. 4.—Schematic diagram showing plan of pressroom in which Method No. 5 ink mist control is employed with open-type units.

at a convenient height from the floor. Here the ink particles are removed and the filtered air goes into the filtered air duct overhead. After passing through the fan, the air travels on to the exhaust damper, where part of it is discharged outside; the remainder goes through the recirculating duct and back into the room. The arrangement of the outlet registers is such that a continuous air current sweeps across the press and picks up most of the ink mist liberated by the press.

Because recirculation of the filtered air is possible, the heat loss from the room is lower than on other systems. Makeup air to replace that which is discharged outside usually is drawn in through the basement or reelroom. It comes up to the pressroom through the press openings at the floor level, and carries ink mist with it as it travels to the filters.

This system will do a better job of keeping the pressroom air clean than the systems previously described. It can do this because air currents are directed in such manner as to do the most good. Also, because recirculation of the cleaned air is possible, more changes of room air per minute are possible for a given loss of room heat, or cooling.

Maintenance costs are low. The ducts handle only filtered air and, accordingly, do not need frequent cleaning. The Auto-Airmat filters (See Fig. 5) use a paper-like filter medium similar to Kleenex paper. It removes over 95% of the solid matter in the ink mist, is inexpensive to use, and easy to install. Unskilled personnel can install new rolls of paper as needed. The dirty rolls are thrown away. See Table I for result of tests run on a typical filter.

The filter paper used is double thickness, supplied in rolls 250 ft. long and 40 in. wide. The clean roll is placed in the filter and feeds across the active filter area and onto another roll where the dirty paper collects. A small motor driving the re-roll furnishes the motive power. The air pressure drop across the active paper area is constantly monitored by a differential pressure switch. When the paper gets dirty and the drop exceeds a certain preset value, the motor is started and draws fresh paper over the active filter area.

Filter pressure drop is dependent on air velocity and amount of dirt collected on the medium. Feeding of new medium into the air-stream is effected when the pressure drop reaches 1.5 to 2.0 in. of water. Resistance of filter when filtering medium is clean is on the order of 0.3 in. of water at 500 f.p.m. air velocity.

Having now completed the descriptions of existing ink mist control systems, we will describe the system as developed by H. Earle Runion Production Engineers.

While systems previously used were all designed to recapture and control ink mist after it has escaped into the atmosphere of the pressroom, the Runion system prevents it from escaping.

It was found from experiments conducted at the Louisville (Ky.) *Courier-Journal* and *Times* during the summer of 1950 that the escape of ink mist from enclosed-type press units can be prevented. A Goss Headliner press unit was used for the tests.

When a slight negative air pressure is maintained in the press enclosure, air from the room leaks in instead of ink mist leaking out. It is believed by many that the movement of the speeding newspaper web from the press causes ink to be thrown into the air, but such is not the case. Ink is not thrown from the paper after or during its original impressions The source of the mist is the inking rolls in the press itself.

To provide the negative pressure a blower was connected to a press unit as shown in Fig. 6. The various cracks around the doors were sealed temporarily with adhesive tape. Sheet metal pieces were used to close the openings around the floor plates. No attempt was made to reduce the area through which the web entered and left the enclosure.

In spite of large leakage areas remaining, the blower used was able to produce air infiltration at all the points where the ink mist formerly had escaped. From 750 to 900 c.f.m. was required for each leg of the press unit. *A tighter enclosure, such as the various press manufacturers now provide, would require even less air movement.*

Using 900 c.f.m. per leg, the ink mist concentrations shown below were found:

Ink mist concentration in discharged air.....3.2 gr/1000 cu.ft.
Ink mist concentration in press enclosure with blower running 5.8 gr/1000 cu.ft.
Ink mist concentration in press leg enclosure with blower stopped 35 gr/1000 cu.ft.

Comparative temperature readings taken with and without blower attachment indicated that the unit with the blower was approx. 10 deg. cooler inside the enclosure than an adjacent unit without it.

It is interesting to note that the ink mist concentration in the discharged air was lower than that in the enclosure. This effect is probably caused by room air being drawn into the enclosure at points

TABLE I—EFFICIENCY TEST ON AUTO-AIRMAT FILTER

Date Test Conducted	No. Plys Airmat Paper	Duration of Test in Min.	Filter Res. Inches w.g.	Air Velocity f.p.m.	Efficiency Percent
4-5-50	2	105	1.5	480	98
4-7-50	2	120	1.5	480	98
4-10-50	2	100	1.2	375	96
4-11-50	2	105	1.5	375	97
4-13-50	2	105	1.0	250	95
4-14-50	2	130	1.2	250	96

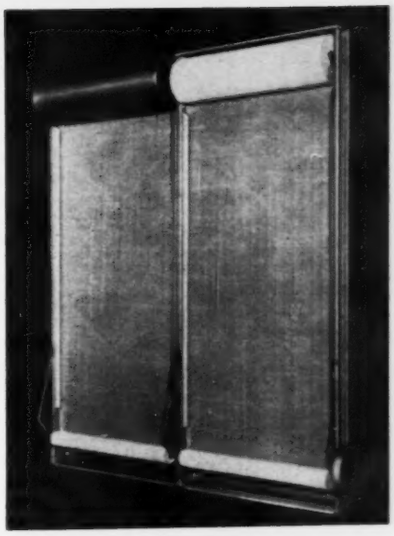


Fig. 5.—**Here is shown a battery of two American Air Filter Auto Airmat Filter Units. Individual Auto Airmat Filters are used in the system described in this article. The paper-like filter medium is similar to Kleenex.**

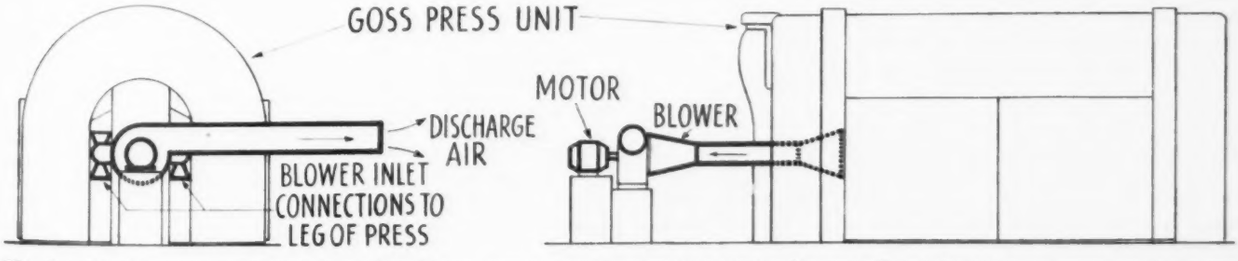


Fig. 6.—**This diagram is representative of the blower connections to press in test setup for controlling ink mist in a newspaper pressroom as discussed in this article. However, the connections were not made exactly like this in the actual installation because of the desirability of conserving floor space.**

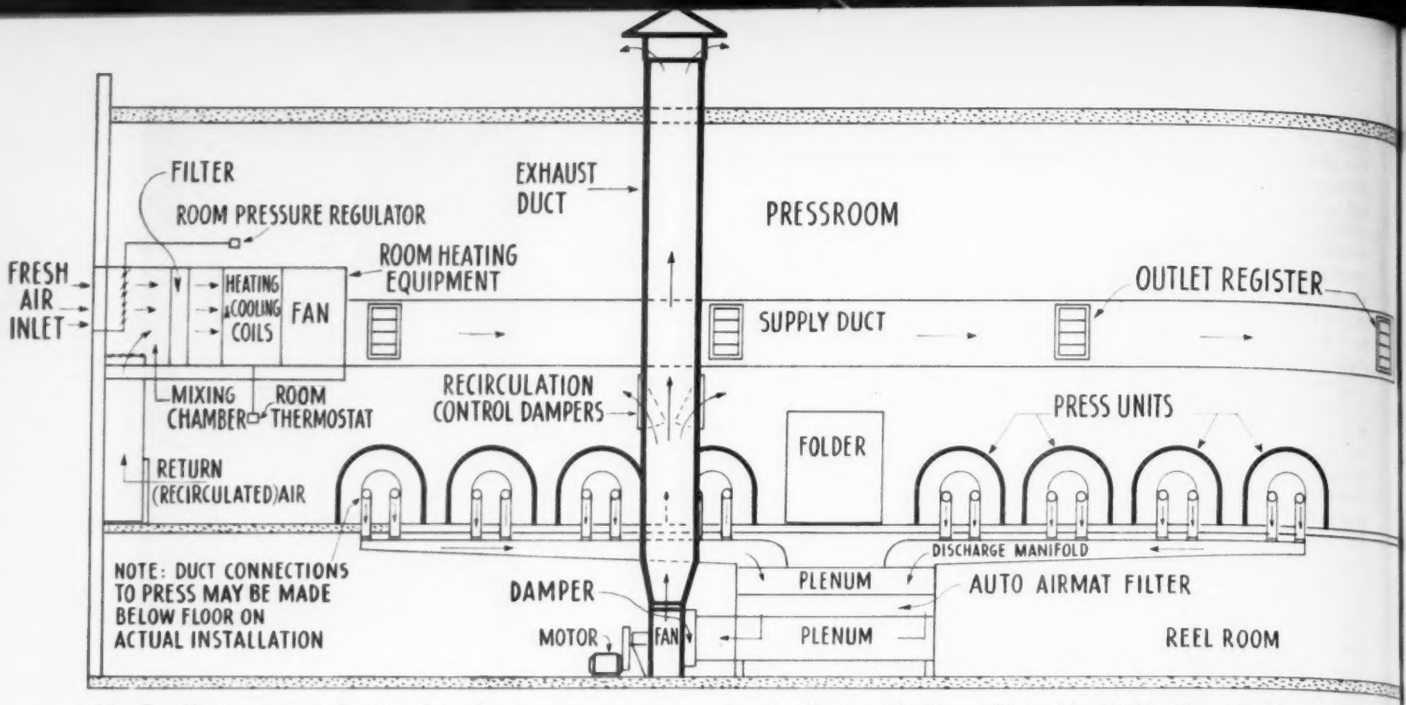


Fig. 7.—This is a section elevation through a newspaper pressroom of an installation of the Runion Method for Ink Mist Control. (Patents Pending)

near the outlet and short-circuiting to the outlet before it had thoroughly mixed with the contaminated air in the enclosure.

Because the concentration in the enclosure was reduced from 35 to 5.8 gr./1000 cu. ft., any momentary puff of air into the room, such as might be caused by opening one of the press doors, would be correspondingly less serious.

During the test the air discharged from the blower was permitted to blow into the room. On an acutal installation, the air would be filtered and disposed of as shown in Fig. 7.

In this figure, is shown a complete installation for an 8 unit press. The arrows indicate the path of the air flow. Recirculation of part of the filtered air decreases the size and investment ordinarily required for the heating and cooling system in the newspaper building. On very cold days a large percentage of the filtered air can be recirculated, thereby sharply reducing the peak load on the heating system. Since the peak load determines the size and cost of the system, it is obviously desirable to hold it down.

A description of the operation and components used in this typical system follows:

The filter is an American Air Filter Co. Auto-Airmat with a capacity of 16,000 c.f.m. It has a maximum resistance of 2.0 in. water ga. and a normal operating resistance of 1.5 in. Used with the filtering device are top and bottom plenum chambers, the top plenum being connected to the suction ductwork, and the bottom one to the fan. The filter medium used is 2 ply provided on a roll containing 250 linear feet. It is fed automatically as dictated by the loading and resistance pressure of the active surface.

The upper plenum is equipped with an automatic pressure regulator set to maintain a constant negative pressure sufficient to permit 1000 c.f.m. of air to be exhausted from each leg of each press unit (a total of 2000 c.f.m. from each unit). No air is exhausted from press units not in operation. Thus the amount of air flow through the filter device will be proportional to the number of units actually running.

Each press unit is equipped with a damper that will cut off the air flow when the press is idle. An automatic pressure switch controls the damper motor. The switch is actuated by the oil pressure line of the press unit. The damper motor linkage is made adjustable so that the open setting of the damper can be adjusted to meter or control the volume of air exhausted from each unit.

The fan is of the non-overloading blade type rated as 16,000 c.f.m. capacity at 3 in. to 4 in. w.g. static pressure. It is driven by a 15 h.p. motor through V velts. Fan and motor are mounted on a common vibration dampener base. Canvas connections for inlet and outlet further insulate vibration. A vortex type volume control damper is used at the fan inlet. It is controlled by a static pressure regulator in the upper plenum of the filter set to maintain constant negative pressure in the plenum. It can regulate the fan exhaust through its full capacity range. For example; 6,000 or 16,000 c.f.m. are required respectively for 3 or 8 press unit operation. Filter paper and electric power to the fan motor are thus used only in the amount actually required.

The room heating and cooling system must be coordinated to replace automatically the air exhausted by the ink mist system. Otherwise, the desired static pressure in the room would be upset, and permit dirty outside air to leak in through cracks around the doors and windows. This is done with the room pressure regulator, which controls the fresh air inlet damper on the pressroom heating system. The regulator is usually set to maintain a slight positive pressure in the room.

While paper dust is not in itself as bad as ink mist, it forms nuclei that attract ink particles. The net result in most pressrooms is the production of a black sludge made up of ink particles and paper dust. Most of the paper dust is generated at the cutter blades in the folder. By creation of the proper air currents in the vicinity of the folder it is possible to keep most of this dust in suspension until it can be drawn into filter hoods or air intake grills, and withdrawn from the room. It, too, will be collected by the Auto-Airmat type filter.

Conclusion

The Runion system of ink mist control does not allow the ink mist to get into the room, and it does not use large quantities of outside air that must be heated in the winter or cooled in the summer. The outside air requirements are controlled automatically in proportion to the number of presses actually running. No excess outside air is brought in. Filtering, heating, and cooling costs are reduced. It gives clean room air, and can probably reduce fuel bills at the same time. Calculations indicate that on a new installation of heating and cooling equipment, savings up to 50% in installed capacity are obtained. If the equipment is already installed this saving in initial investment is, of course, not realizable; but it does give a reserve capacity that might be used for some other part of the building.

The operating cost of the equipment will depend on local conditions and, while it may not result in a 50% savings as compared to conventional methods, the savings will be substantial. The maintenance cost of press drives and other equipment will be reduced when ink and paper muck are properly controlled. Note: On new press installations the Goss Printing Press Co. and other press manufacturers offered to cooperate by providing the small flexible duct connections beneath each new press unit, if the customer requests it, if notified far enough in advance of fabrication.

If the wrapper in which *Printing Equipment Engineer* is sent to you is addressed incorrectly, please notify us.

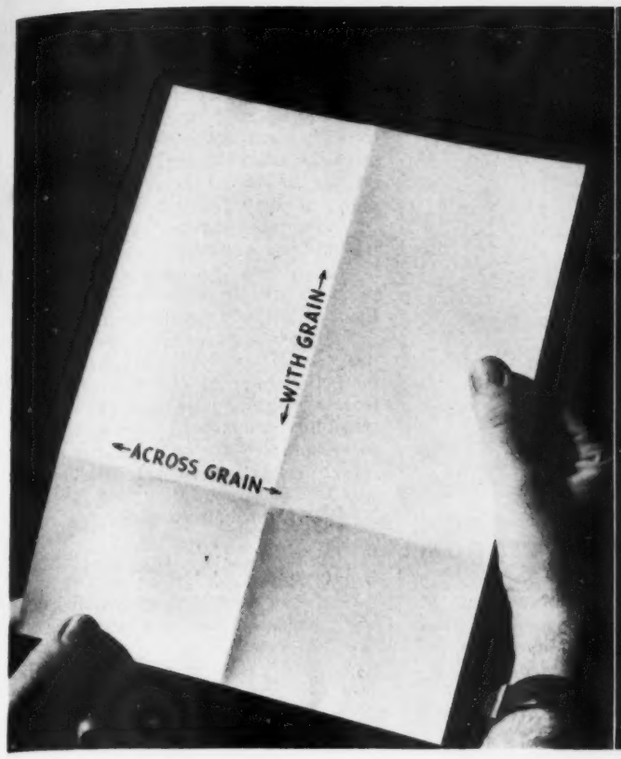


Fig. 1.

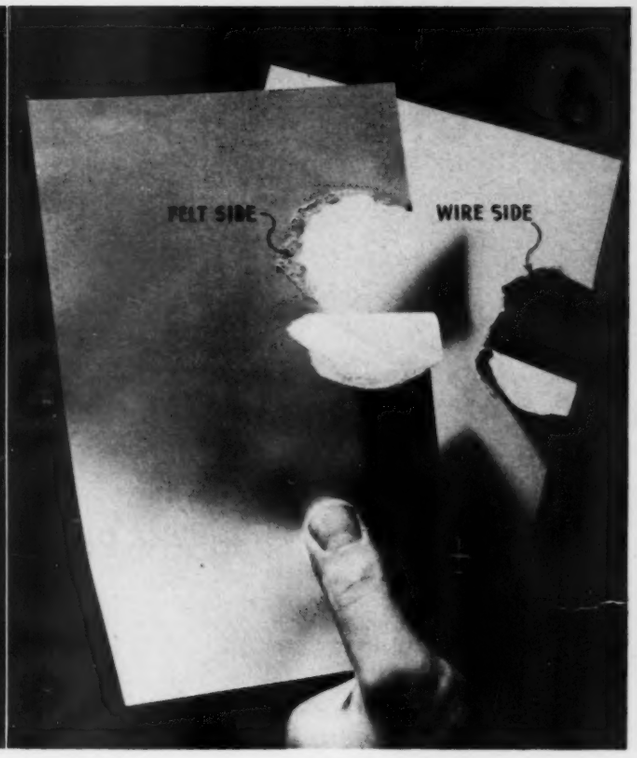


Fig. 2.

Coated Stock—

In which direction does grain run? Which is wire and which is felt side?

DURING the Problems Clinic at the International Association of Printing House Craftsmen convention, Boston, Craig R. Spicher, Printing Research Director, Miehle Printing Press & Mfg. Co., made a contribution to the "science" side of fine printing.

Mr. Spicher prefaced his remarks by saying it is the Craftsman's motto to give credit to the party who furnished the practical method, which he attributed to William H. Bureau, Technical Director, Butler Paper, Inc., Chicago.

The practical method discussed was related to determining the direction of grain in a sheet of coated paper, and also determining which is the wire and which is the felt side of the sheet.

We know that the top side of paper is the felt side. The opposite side shows a pattern or screen effect. This is called the wire side.

Naturally, the felt side is the best printing surface, especially on bond and machine finish papers. One can readily determine the felt side of any machine finish book paper.

Certain pressroom supervisors instruct their pressmen to makeready the form to suit the wire side, for pressure and correct amount of ink, to obtain uniformity throughout the printed job.

In coated paper you cannot see wire marks because the coating completely conceals them. A test (Fig. 2) that will usually give success in determining *wire* and *felt* sides of coated paper follows: First ascertain the direction of grain of the skid of paper by marking the top sheet before removing the sheet from the skid. Printers know the simple test Fig. 1 for ascertaining grain by folding the sheet, both directions. The smooth folded edge indicates the grain direction. The fold across the grain will show breaks or a roughness in the folded crease. Knowing the grain direction, start the tear, first across the grain, then gradually in a circular manner finishing with the grain; then turn the sample completely around and repeat the process. The edges of the torn section which split more is the felt-side of the sheet. The edges of the torn section on the wire side tear sharper with less splitting of the coating from the pulp. This is due to the difference in orientation of the fibers on the two sides.

Mr. Spicher exhibited a specimen of fine color process work, printed on the felt side of the coated paper with the reverse side (wire side) printed in black only. He pointed out that to take full advantage of every point to produce fine presswork, the pressman must be alert to factors of this character and print the most important pages or subjects on the best side of coated and uncoated papers.

He further stated that certain national advertisers insert a clause in contracts that their magazine advertisements (particularly color process illustrations) must be printed on the felt side of the paper. In some cases it has made it necessary to reverse the roll of paper in the press. It is easily understood that the felt side is the best side, and offers the best method to get the topmost results in printing, plus fidelity of colors and uniformity of product.

More Survey Returns

Further returns to a questionnaire sent out in connection with a survey of the printing industry being made by J. W. Rockefeller, jr. & Associates, Consulting Printing Engineers, indicates that there exists a market for a reasonably priced collating machine.

In answer to the question "Of hand bindery operations the following account for what part of your total?", the average return indicates 49 percent of hand bindery time is spent in flat-sheet gathering. To another question "The greatest need for automatic equipment to take the place of hand labor is in the following operations", 61 percent checked flat-sheet gathering (interleaving), 42 percent of those replying were of the opinion that there was a need for automatic feeding equipment to take the place of hand feeding of such automatic machinery as stitchers, etc., while 22 percent checked materials handling.

It is contemplated that the study will be completed sometime in October at which time a final covering report will be released.

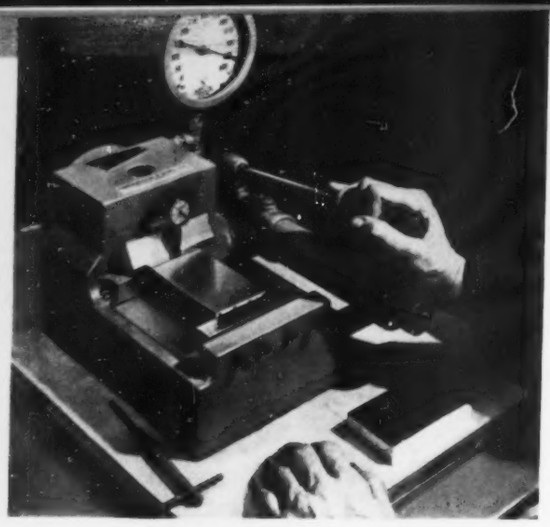


Fig. 1.—Special bear-off gauge built to determine moment when applied pressure begins to move a plate from its mounting.

A Different Approach to Pre-Press Makeready

IN THE commercial printing field where printing is done from forms, consisting of type, plates and spacing material, many individuals in the Graphic Arts industry have worked on the problem of eliminating or minimizing press form makeready. In the letterpress section of the printing industry, form makeready probably causes more press down time than any other operation. By makeready we mean the condition of the form with respect to type high when the pressman receives it, the justification of the various form elements to cause those elements to function so far as possible as one piece of metal, and the overall dimension of the form in relation to area alignment.

Contrast Use of Forms

Another way of expressing the desirability of closely controlling the dimension of elements in a type form is to say that the form is made up of many separate pieces all fitted together. These forms are used not only by letterpress printers but a goodly number of them are employed in offset and gravure platemaking. In the offset and gravure processes the form is abandoned once satisfactory reproduction proofs or transparencies have been provided. The offset or gravure platemaker demands—and gets—satisfactory reproduction proofs. From that point on, he works with one-piece units which go into the plate. The letterpress printer, however, who prints from the form direct must work through to the finished product with the form or from a plate made from the form itself.

Principal Cause of Instability

All plates, when mounted on wood, are the greatest single cause of error in dimensional stability in the form. This subject has been dwelt upon frequently by many writers.

One of the purposes for which Vandercook & Sons, Inc. established a research laboratory some time ago was to develop methods and equipment to eliminate or at least reduce makeready time on the forms in the commercial pressroom. A number of developments resulting from this have already been announced.

Development of Base

However, the developments which we wish to discuss in this article are the Vandercook Base and Backing methods. During the development stage in the Vandercook laboratory, various plate mounting materials including wood, treated wood, plastics, alloys and others were tested exhaustively. The purpose in developing the base was not only to reduce form makeready time, but also to improve the lockup of press and foundry forms.

In the end, the laboratory came up with a type metal base cast in a stereotype box fitted with a special aluminum mold. The top surface of the base is diagonally grooved. These grooves are V-shaped and about ⅛ in. in width and depth. For mounting plates on this base, a thermosetting bonding film is interposed between the plate and the grooved face of the metal-cast base—after the base has been levelled to proper height. The assembly is put into a mounting press under pressure and heat. Here the thermosetting adhesive is bonded to both plate and base.

Plate Held Tenaciously

The Vandercook Laboratory reports that a plate mounted by the new method will withstand ten times more pressure (lateral pressure) than a plate nailed to a wood block. In other words, the adhesive medium used does not permit the plate to shift under a pressure up to about 600 lbs. per sq. in. To arrive at a determination of the moment when applied pressure would begin to move a plate from its mounting, a special bear-off gauge was built (Fig. 1). With this, it was found that a nailed plate would pop off its base at about 50 lbs. pressure per sq. in.

Easy Plate Removal

One of the features of this method of mounting plates is that the plate may be removed in a few minutes from its base when desired. This is done by laying the mounted plate face down in a shallow pan of solvent. The grooves in the top of the base permit the solvent to run through them under the plate and dissolve the bond. Methyl-Ethyl-Ketone is used as the solvent. It is stated that ordinary washup solvents have no effect on the adhesive during a press run. After having been immersed in the solvent for 5 min. or less, the plate may be easily pried off with an ink knife. The base can then be used over again or remelted.

The V-shaped grooves cast into the face of the base not only serve as a means for permitting easy removal of the plate from the base, but also eliminate the possibility of air bubbles or gas pockets forming under the plate at the time of mounting plate on base. Under heat and pressure of the mounting press, these are forced out through the grooves.

Operations Discussed

To follow through operations in casting the base and mounting the cuts, the operations are:

1.—The special aluminum mold shown in Fig. 2 (inside casting size 12½ in. by 20 in. by 0.918 in.) is placed in a flat stereotype casting box. Any box will do that will take the mold measuring 14 in. by 24 in. Casting bars are not required. The equipment can include either an electrically or gas heated melting pot. The base is then cast.

2.—The next step after removal of the base from the stereotype casting box is to cut a squared piece of the base on a composing room saw, 1/16 in. or 6 pts. larger than the plate which is to be mounted. (See Fig. 3). The oversize dimension permits the plate to be squared accurately in the final trim to pica measurements.

3.—Next, the base, which has been rough cut, is ready for planing (Fig. 4) on the grooved face to provide a flat surface upon which to mount the plate by removing approx. .030 in. The base is then turned over and planed on the back to a predetermined height. This height would depend upon the thickness of the plate to be mounted.

4.—In this operation, a section of the thermosetting film is cut to the outline of the plate (Fig. 5). The film should also be cut away in any open areas in the plate.

5.—The height of the assembly (base, film and plate) is now checked on a Vandercook Plate Gauge *under printing pressure*. In the case of 0.065 in. plates, the total thickness of the mounted plate might range from 0.917 in. to 0.921 in. depending upon the printing characteristics of the plate. Additional sheets of film can be interlaid between halftone plate and base to raise the solids or removed to relieve the highlight areas.

6.—After checking the total height of the mounted plate, the assembly is put on the platen of a mounting press (Fig. 6) with type high bearer bars on each side to protect the printing edges of the plate. A soft paper pad about 0.030 in. thick is placed on the plate to protect its printing face. Heat of about 350 deg. F. and

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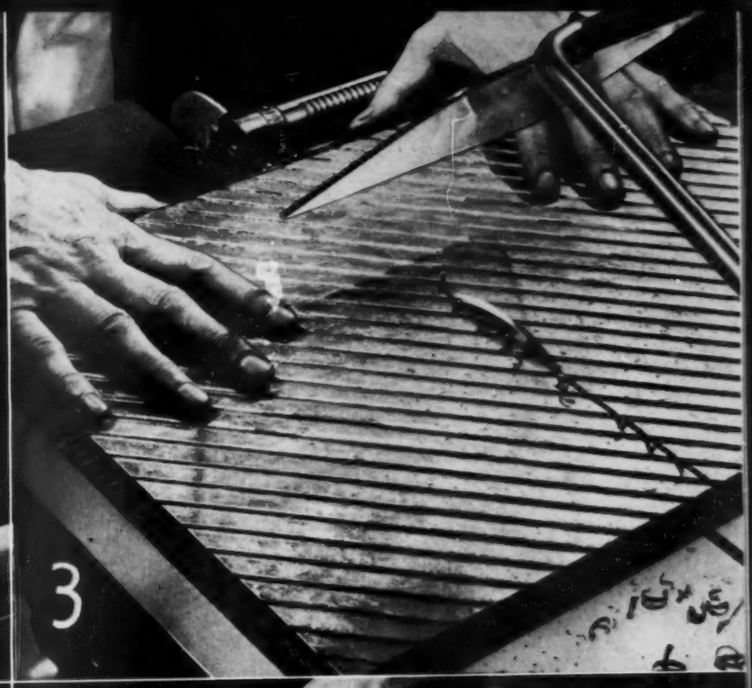
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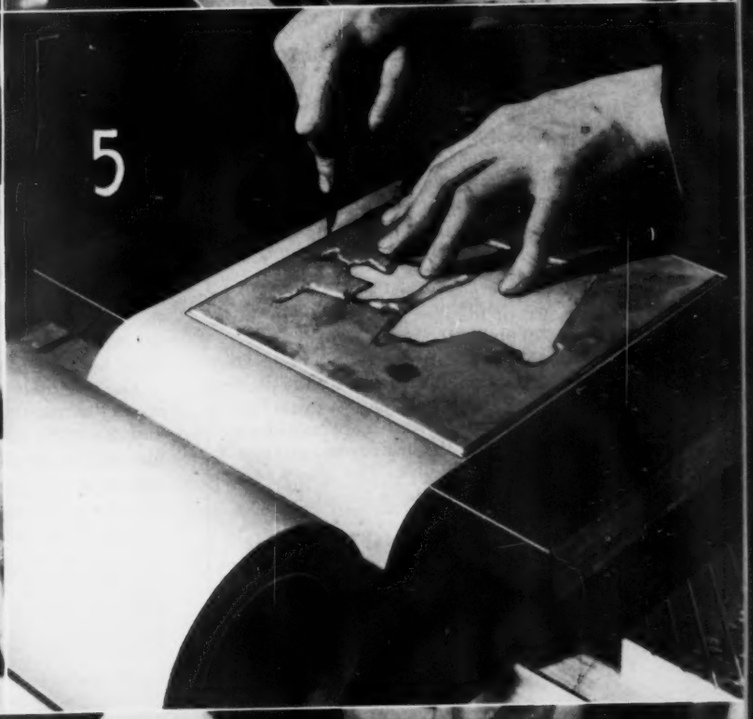
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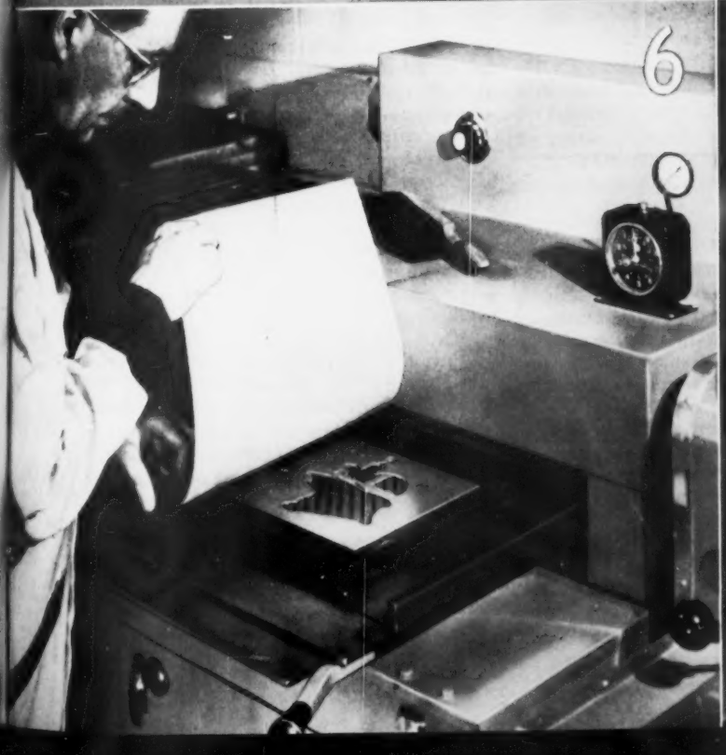
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Fig. 8.

pressure of 40 lbs. to 50 lbs. per sq. in. is required.

7.—After the bonded plates have been removed from the mounting press, they are allowed to cool and can then be trimmed to exact size on a composing room saw-trimmer.

8.—The plates are now ready to be proofed or may be placed directly in the press or foundry form.

9.—After the press run, the plates may be unmounted in 5 min. or less by placing them face down in a shallow pan (Fig. 7) with sufficient solvent to permit the solvent to enter the triangular grooves to dissolve the adhesive. The plates can be pried off the base with an ink knife.

Mounting Original Engravings to Patent Base Thickness

A method for adhesive mounting of original photoengravings on grooved backing to patent base thickness was also developed in the Vandercook laboratory. The procedure is the same as for mounting plates to type high on Vandercook Base. The difference in the method, however, is in the mounting material used. This is called Vandercook Backing and consists of 0.085 in. grooved lead alloy sheets. Both the backing sheets and 0.002 in. thermosetting bonding film are supplied by Vandercook.

The assembly consisting of the 0.065 in. engraving, the 0.002 in. bonding film and the 0.085 in. thick mounting sheet is now placed on the mounting press apron equipped with an 0.838 in. bed plate. Balance of the procedure is similar to that for type high mounted plates. The plates are ready to be beveled in the usual manner after being allowed to cool. Plates may be removed from the lead alloy sheet similarly to that of type high plates.

Plate Mounting Gauge

The Vandercook Plate Mounting Gauge (Fig. 8) is designed for use in photoengraving, electrotyping and printing plants. It is used for mounting round, oval or irregularly shaped plates in correct position on a base as well as for positioning color plates in register.

The gauge consists of two rigidly mounted steel bars forming an accurately squared corner, into which the base is locked in a fixed position. Along the left edge is a hinged sheet of 0.020 in. Vinylite, accurately ruled in pica squares. To hold the base in a fixed position while the plate is being positioned, an adjustable locking device is also provided with the gauge. These units, together with an impression cylinder, are mounted on a rigid, accurately machined steel bed.

In color plate register-mounting, the first step is to mount the key color plate squarely on the grooved base, trimming it to finished size. This is then locked into the gauge chase, inked with a brayer, and an impression is taken on the Vinylite sheet with the impression cylinder provided.

The next operation is to cut a section of the bonding film exactly the same shape as the plate to be mounted, and to prepare another piece of grooved base the same size as the key color plate.

Next, a few daubs of cement are placed on both sides of the film and the assembly is laid on the base for registering with the key color plate.

The hinged Vinylite sheet is brought down over this assembly and the plate with the film moved into register with the impression on the Vinylite. This is done by lifting the Vinylite with the right hand and moving the plate with film with the left hand. When the plate has been positioned, the cement previously daubed on the film will hold it in place until pressure is applied in the mounting press.

The remaining color plates (if any) are treated similarly.

Film *vs.* Lead

By THOS. P. HENRY*

**The Thos. P. Henry Co., Detroit, Mich. Address delivered before the National Association of Photo-Lithographers, Buffalo, N. Y., September 1951.*

FOR the past year our plant has been working with an Intertype Fotosetter. The first three or four months were devoted primarily to installation of the equipment and training of our personnel. Since January of this year, we have been soliciting and setting production work on this machine.

Today we would like to discuss with you certain features which are unique with the Fotosetter method of composition. With this machine we are able to set justified lines of composition up to 7 in. wide, at a keyboard, thus producing type characters on film with machine production roughly equivalent to composition in lead. The film itself is then developed, proofread, corrected in a relatively simple manner, and Ozalid proofs furnished to the customer. Upon final approval, we supply film positives or negatives to the plate maker.

Start from Scratch

Our firm is somewhat different than the majority of those nine plants that have Fotosetters in operation. Up until this equipment was installed we had no experience with anything except typographic composition in metal. All of our energies were directed to handling lead type as artistically and efficiently as possible. We had no darkroom equipment and our employees did not need to know anything about dealing with film. It was necessary for us to start from scratch in this part of our operation. On the other hand, the making of layouts before setting type, the actual machine composition, and the mechanical end of the Fotosetter presented few new problems.

Those Main Components

In the course of the work we have done on this process during the past year, we

feel that we are well qualified to discuss the many changes from conventional procedures which arise in setting type by the use of a camera. The Fotosetter system has three main components. The first and major part of the operation consists of a typesetting machine and the accessories therefor. The other two essential units are a well-equipped darkroom and a stripping procedure which includes a unique method of making line corrections.

Almost Identical

As you all know, Intertype Corporation has had many years of experience in making slug typesetting machines. In fact, at least three-fourths of the Fotosetter machine is almost identical to the regular hot metal Intertypes. This has proved to be a distinct advantage in our plant as our men have not had to learn a new and complicated method of setting type.

The Fotosetter keyboard is identical with the regular keyboard except for the addition of one alphabet. Normally, we carry a font of small caps in the regular magazine which we cannot do on our conventional machines. However, these additional 26 keys permit us to insert other special characters on certain jobs. In fact, our regular hot metal slug machines would be considerably more efficient if they had been originally designed in the same manner as the Fotosetter keyboard.

As the two keyboards are similar, we have had no difficulty in using our operators interchangeably between the two types of equipment. We did not find it necessary to set up a long training program in order to establish an efficient department. It also means we have much greater flexibility in scheduling work.

Justification

The Fotosetter is similar to the hot metal slug machines in that the product is a justified line of composition. The method of justification is not the same, enabling the operator to set better spaced lines on the Fotosetter. Through an ingenious device Fotosetter word spacing is relatively uniform. Instead of the justifying space being spread between the various words in the line, it is distributed evenly between the words. Although the letter spacing varies slightly throughout, the over-all appearance of a well-set piece of Fotosetter composition is more uniform than type set on either slug machine or Monotype.

The Fotomat

Circulating matrices are used on the Fotosetter in the same way as they are used on hot metal machines. These matrices are stored in interchangeable magazines and are called Fotomats. Instead of casting the type character into lead, the image on the Fotomat is photographed directly onto a roll of film—letter by letter—a line at a time. This permits close fitting of all characters—particularly italic—kerning of caps, and better spacing throughout.

The Fotomats are designed in 8 and 12 pt. sizes. From the former, we reduce to secure 4, 5, 6, and 7 pt. From the latter, we reduce to get 9, 10, and 11 and enlarge to get 14, 18, 24, 30 and 36 pts. The circulating matrix principle also permits easy introduction of special characters such as fractions, accented letters, and the like. This is a particularly important feature when we are dealing with composition which is put directly on film.

As with regular slug machines, the Fotosetter is so arranged that we can combine Roman and Italic, Light and Bold. With four magazines of 12 pt. the operator has 8 sizes of type from 9 to 36 pts., a total of 32 fonts, at his command without leaving the machine.

The Fotosetter furnishes lines spaced in any manner the operator desires. We can set 8 pt. on 9, 11 pt. on 13, etc. However, it is true that the original layout of the job is most important. The spacing must be figured accurately in advance for satisfactory results.

In addition to the unique system of justification which we have already discussed, the major difference between the Fotosetter and a hot metal slug machine is the fact that a camera has replaced the metal pot. This camera photographs the Fotomats letter by letter at a speed of 480 per minute. We have had no problem with an operator being required to wait for the machine.

Intertype Corporation is proceeding with cutting today's most popular faces

(*Continued on Page 82*)

New Mid-Western Manager for P-Double-E

This announcement will introduce *Printing Equipment Engineer's* new Mid-West Manager, Melburn O. Simmons. As Space Representative, he will call upon printing equipment and supplier companies in the mid-west.

He is a graduate of the University of Illinois in Business Administration. During the past two years he has been space representative in the Cleveland area for *Nation's Business* and *Chicago Journal of Commerce*.

Simmons is 33 years of age, is married and has two daughters. He and his family will live in Chicago.

Simmons' address is 333 North Michigan Ave., Chicago 11. His phone number is DEarborn 2-6467.

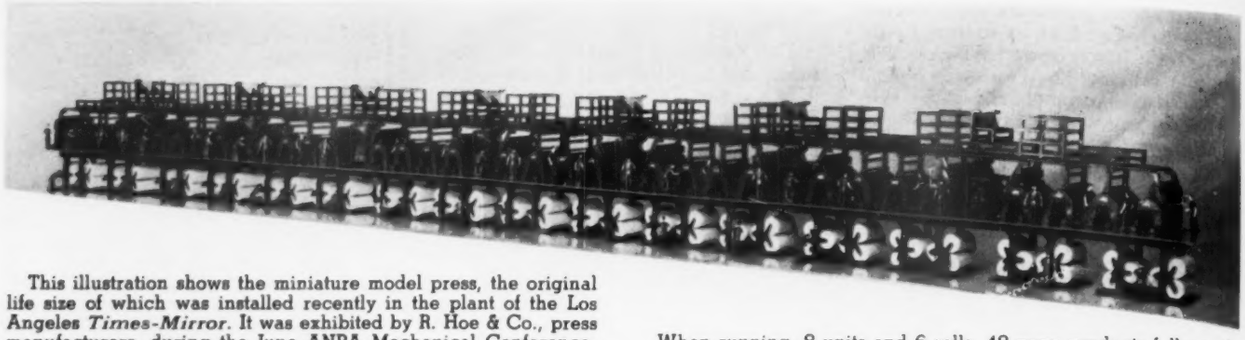
Appraisal of Phototypesetting

With most printing equipment, two shift operation is normally necessary to sell in a competitive market. In a composing room, productivity must usually be maintained at least 70% in order to make a profit. Securing sufficient work to keep even one phototypesetting machine busy on such a basis will not be possible in most printing plants.

In addition to the Intertype Fotosetter which is now in commercial use, there are several other phototypesetting machines in various stages of development. However, let us bear in mind that whatever the process of setting type without the use of lead may be—whether it be Fotosetter or some other method of phototypesetting—and including the various typewriter systems—all have the same two definitely limiting factors. The first of these is the speed and ability of the operator, and the other is the fact that the ultimate product is either a piece of film or a piece of paper which cannot be changed, corrected or handled in most cases as easily as hot metal.

Many claims have been made about operator efficiency on substitute process equipment. Increased speed of production at much less cost is frequently promised as an answer to high composition costs. It seems increasingly apparent, however, that a well-set piece of composition requires an able operator to set and space it properly—regardless of the method used. As such individuals become more proficient their rate of pay goes up—no matter what machine they use.

Finally, we would like to reiterate that the product of the Fotosetter is absolutely top in quality. It is this quality which we feel will make those jobs which can be economically adapted to this process, ultimately go to some method of phototypesetting.



This illustration shows the miniature model press, the original life size of which was installed recently in the plant of the Los Angeles *Times-Mirror*. It was exhibited by R. Hoe & Co., press manufacturers, during the June ANPA Mechanical Conference, Edgewater Beach Hotel, Chicago. The press was built to a scale of ¼ in. per ft. and measures 5 ft. 8¼ in. from end to end. The actual press extends in a line 273 ft. 7½ in. long. The press consists of 32 units in line. Each octuple is equipped with two extra color cylinders. There are six folders. In explaining the arrangement of the press, Vice President Arthur Dressel stated: "On the four 8 roll presses, 64 pages in steps of 2 page increments with one extra color on 8 pages may be produced at full press capacity. When running, 8 units and 6 rolls, 48 page products full-speed, with three colors and black could be produced on 8 pages, or when running collect 96 page products would be produced with three colors and black on 16 pages."

Some idea of the tremendous amount of newsprint consumed by this mechanical behemoth may be comprehended when it is stated a newsprint roll weighs approx. 1800 lbs. When all 32 of the rolls in this press are fully loaded the newsprint above will weigh in excess of 172,800 lbs.

Gleaming Models

Enable Customers to Visualize Proposed Real Newspaper Press

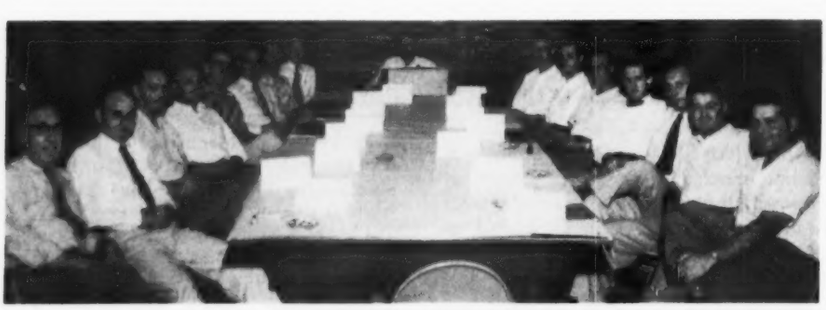
THREE-DIMENSIONAL models of equipment placed in exact position on scaled miniature floor areas of projected new or revamped building quarters are effective. They make it easy for a person to visualize just how the new plant or the new equipment will look when completed.

Two interesting uses of the scale model idea have been employed since 1928, according to Vice President Arthur Dressel, in connection with the newspaper printing presses made by R. Hoe & Co. In the first instance, the sales representative, by means of sectional scale models, can build a miniature press in 10 min. or less on the purchaser's desk in his office. The Hoe representative comes prepared by carrying with him more than sufficient number of the separable parts to construct a press with the desired number of press units, formers, folders and reels, while he and the purchaser and his associates discuss details of the proposed new press.

It is likely that more than one visit to the purchaser will be necessary, because presses aren't bought at frequent intervals. Besides this, they are awfully expensive and mistakes are costly. In such cases, the miniature scale model of the proposed press is left with the buyer so he and his associates may thoroughly consider whether or not the press will be equipped for printing present and future color in addition to the regular black and white work, and if it has enough capacity to accommodate future growth of the paper, and the like.

After all details of the proposed press have been worked out in the scale model and it is satisfactory, the hand rails for the catwalks or running boards are added and the press is fastened together permanently by soldering the joining parts. The completed model is presented to the purchaser with the compliments of the press manufacturer.

The little models employed by R. Hoe



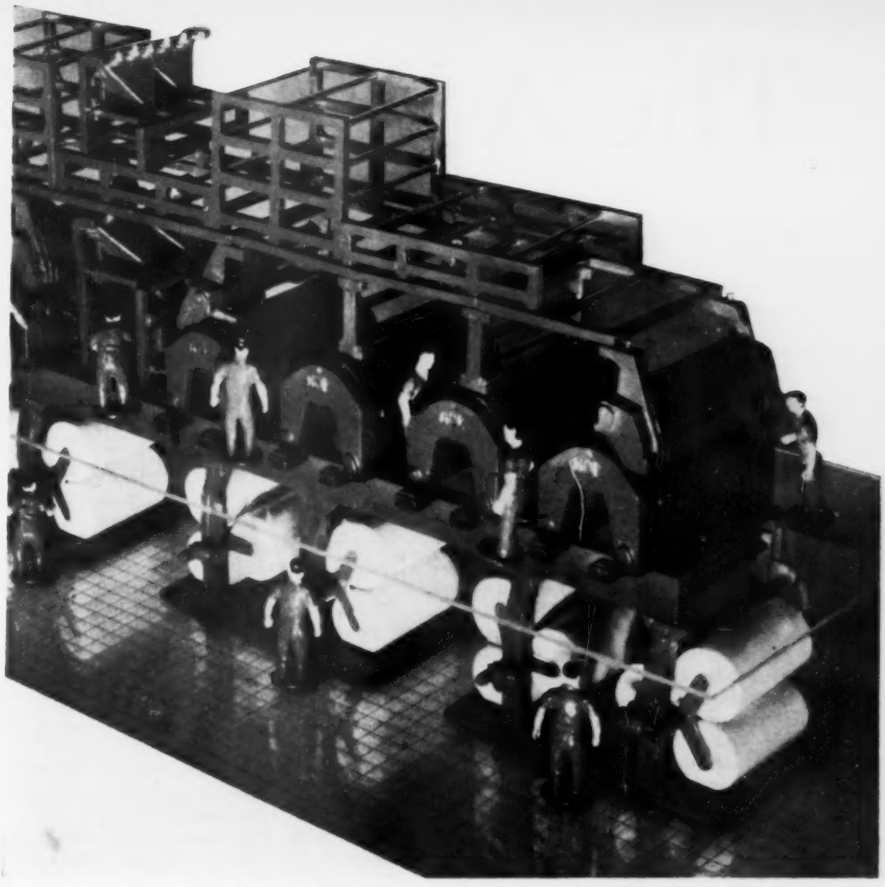
Foremen and superintendents of several printing plants in Louisville, Ky., are shown at a session of the LTF-PIA Foreman's Management Program conference course conducted in that city by James M. Cunningham (head of table) of the C. T. Dearing Printing Co. Others in the picture from left to right are: Howard Heinz and Robert Glanz, Southern Press; Sam Gray, Franklin Printing Co.; Joseph Wills, Rowland Paper Co.; Frank L. Hirt, Charles Merrick, Howard Wells and Robert Owen, Fetter Printing Co.; Mr. Cunningham; Joseph Esterle, Fred Heimendinger and Fritz Kramer, Publishers Printing Co.; L. M. Payne and Wallace Horine, Sanders Paper Stock Co.; Frank Gerstle, Courier Journal Lithographing Co.; and Kenneth Young, Smith and Dugan.

Training Foremen

Improvement in the handling of management problems by foremen has been the experience in many of the printing plants participating in the ITF-PIA Foreman's Management Training Program during its first six months of operation. This conclusion was reported recently by Printing Industry of America, Inc., and the Lithographic Technical Foundation, co-sponsors of the program.

Over 300 printing plant foremen and supervisors in 10 cities have started or already completed the course. The training program is built around the practical daily problems of the foremen in printing plants. Material for the program was prepared under the supervision of a subcommittee of the Lithographic Technical Foundation and the PIA Education Committee. In charge of the program is William F. Gutwein, Director of Employee and Public Relations of the C. T. Dearing Printing Co., Louisville, Ky. He is assisted by Charles W. LaBlanc of the Executive Staff, Research Institute of America.

The objectives of the program are to assist the foreman in the following: understanding managements' viewpoint and participating in the solution of management problems; building morale among his men; improving quantity and quality of production; and maintaining production schedules and reducing costs. Members of both PIA and LTF are invited to write to either association for information as to when and how they may have the opportunity to participate in the benefits of this program.



Close-up of a section of the miniature model Hoe newspaper press (32 press units) installed in the plant of the Los Angeles *Times-Mirror*. These miniature presses are "built" of separable sections, each of which is connected to its component part by means of small dowels and dowel holes.

R. Hoe & Co. representatives bring along an assortment of miniature press parts when consulting with a customer. These are assembled in the purchaser's office to enable him to visualize the appearance and capacity of the press he is contemplating purchasing.

The scale model is ¼ in. to the foot. The press rests upon a slab of clear Lucite ¼ in. thick, scored with ¼ in. to the ft. graduations. In reality, a newspaper press is two building stories high. In the reel room in this illustration, the substructure and bed plates are visible. A slab of clear Lucite ¼ in. thick is used for mounting the press units above the paper roll reels. This is called the catwalk or running board.

The various press parts, consisting of bed rails, press units, top rail sections, upper formers and bar arrangements, folders, as well as the color cylinders are cast from line-composing machine metal, as are the pressmen at work on the press. The principal parts of the press are painted a soft grey. The paper rolls are white. The men are dressed in khaki color overalls. Future press unit additions, when projected into the model line, are painted bright red to enable the buyer to visualize what the present and future press will be like. This enables him to make necessary contingent arrangements against the time when the additional press units, with necessary complementary equipment, will be installed.

These three-dimensional scale model miniature presses can be used by plant executives, architects and engineers in laying out new plants or existing plants which are to be revamped.

After proposed press equipment has been definitely determined upon and the scale model represents just what the purchaser wants, the joints are soldered together and the press is presented to the purchaser.

& Co. are designed to permit "building" a press according to what the customer should have to accomplish, specific objectives and also to enable him to visualize what the new press will look like in a projected program.

The principal parts of the press are made separably with dowels and dowel pin holes to permit constructing the press units with proper spacing between them, the bed rail and top rail sections are supplied in necessary lengths, and the upper formers and bar arrangements, as well as color cylinders, can be built right into the model according to customer requirements.

The models are designed so that a color unit can be "built" on a left or right-hand couple of the unit, just as in the life size press. A press can be changed to demonstrate tabloid construction from full page size. The distance between units can be changed to obtain various running combinations. The arrangement of the top rail supports varies with the installation of black and/or color cylinders. Where superimposed color attachments are to be supplied, the small models show them. The completed models can also be used by newspaper firms and their engineers who want to develop complete plant scale plans. In addition, future press unit installations can be shown in units which are painted in another color, the units so distinguished being visualized as they would appear when added to the press arrangement under immediate consideration. In this way, the purchaser, architects and builders can visualize exactly what physical space and auxiliary services will be taken up by the proposed addition of the future units and provide in the original plans suitable accommodations for these facilities as would be required in the future.

Over 250 Attend ITCA Convention

THE 32nd annual convention of the International Typographic Composition Assoc. was held at Windsor Hotel, Montreal, Quebec, Can., on Thursday, Friday and Saturday, September 13, 14 and 15. Over 250 people attended.

The following officers were elected:

President—John R. Connell, Connell Typesetting Co., 302 E. Eighth St., Kansas City 6, Mo.

First Vice Pres.—Harold L. McGirr, Monotype-Linotype Composition Corp., New York, N. Y.

Second Vice Pres.—Walter A. Adamson, Mono-Lino Typesetting Co., Toronto.

Treasurer—John W. Shields, Bridgeport, Conn.

The following Vice Presidents were selected: Northeastern, Frank Lightbown, Boston; Southeastern, Gus Russell, Atlanta; Mid-Atlantic, Donald M. Canfield, Utica, N. Y.; Mid-Western, Rawleigh W. Shepherd, St. Louis, Mo.; Southwestern, O. B. Granum, Houston, Tex.; Pacific Coast, Archie J. Little, Seattle, Wash.; Canadian, J. Harry Wimpenny, Toronto, Ont., Can.

Members of the Executive Committee: Philip Sturdivant, sr., Grand Rapids, Mich.; F. Vernon Czarnowsky, Baltimore, Md., Tilmon W. Farrow, Indianapolis, Ind.; Alfred Hoflund, Denver, Colo.; Oscar Hoffman, St. Louis, Mo.; and Frederick H. Lutz, Brockton, Mass.

Executive Director is Frank M. Sherman, 1015 Chestnut St., Philadelphia 7, Pa.

New IPI Contests

Three new IPI contests for the 1951-52 school year have been announced by Fred J. Hartman, Educational Director of the Intl. Graphic Arts Education Assoc. A grand total of $1690 in cash prizes will be awarded in this expanded version of the original annual IPI contest. Two of the contests are for the best essay on the subject, *Color Printing in a Free World*. In the third contest, students compete in designing the Certificate of Honor which IPI awards each year to all teachers sponsoring the IPI contests in each school. Further information can be obtained by writing to Intl. Graphic Arts Education Assoc., 719 Fifteenth St., N. W., Washington 5, D. C.

The ABC of OFFSET

For Letterpress Printers

By George Jos. Lenzer

XX—COLOR FILTERS

IN THE chemical compounding of liquids, the chemist resorts to the use of filters to permit the passage of the liquid and at the same time retain or hold back suspended matter.

Color light filters act in a similar way, by passing or transmitting certain light rays while absorbing and withholding others. It will be remembered that white light is composed of infrared, red, green, blue and ultraviolet rays of primary colors. Because of the wide differences in wave lengths, only the red, green and blue rays are visible to the eye, while the infrared and ultraviolet rays are invisible.

Simply defined, a color filter is a stained medium used to regulate the intensity or color of light while making an exposure in the camera. Only the light that is transmitted by a filter affects the sensitive emulsion.

Sensitivity of Emulsions

A refresher of the color sensitivity of emulsions is considered worthwhile at this time to better understand the uses of the color filters and their effects in photomechanic .

Orthonon or color blind emulsions are sensitive to ultraviolet and blue. All colors within this spectrum band will be recorded according to their luminosity differences. Reds, orange, yellows and greens produce no effect on color blind emulsions and are therefore recorded as black.

Orthochromatic emulsions are sensitive to the ultraviolet, blue, green and yellow rays and wave lengths. All colors within this band of the spectrum will be recorded proportionally to their relative brightness. The oranges and reds will be recorded as black in the negative.

Panchromatic emulsions are sensitive to the entire visible spectrum. Upon exposure in the camera, all colors will be recorded according to their relative intensities.

For use in the Fluorescent process of photography, emulsions rendered sensitive to the invisible ultraviolet and infrared rays or waves are obtainable.

Why Color Filters?

The human eye sees things better than does the camera and filters, in a way, are special lenses or glasses which enable the camera to see better. A filter differentiates colors so that they may be near faithfully reproduced on a specifically sensitive emulsion.

When photographing or copying color art for reproduction, it must be remembered that the negative image is recorded in various tones of greys. Depending upon the color intensities of the pigments used in the illustration and the degree of brilliance and reflectability of the pigments, the reproduction may be a disappointment indeed, as well as being extremely mystifying.

Blue pigments will blend with the whites of the copy, and will not record in their true values on the negative, and may disappear entirely. Reds may blend themselves with browns and blacks, and will be so recorded on the negative with a definite loss of detail and proper tonal relationship.

Since our objective is to reproduce in black and greys the colors appearing in the original copy, in a near true and faithful relationship, we must have some means of co-ordinating and controlling the eccentricities of the light waves, to compensate for the various emulsion sensitivities and limitations. This is accomplished by the use of certain sensitive photographic emulsions in combination with specifically colored light or with colored Light Filters.

What is a Filter?

A light filter is a piece of dyed gelatin mounted in a holder similar to a Waterhouse stop, or it may be sandwiched between two pieces of optically ground glass.

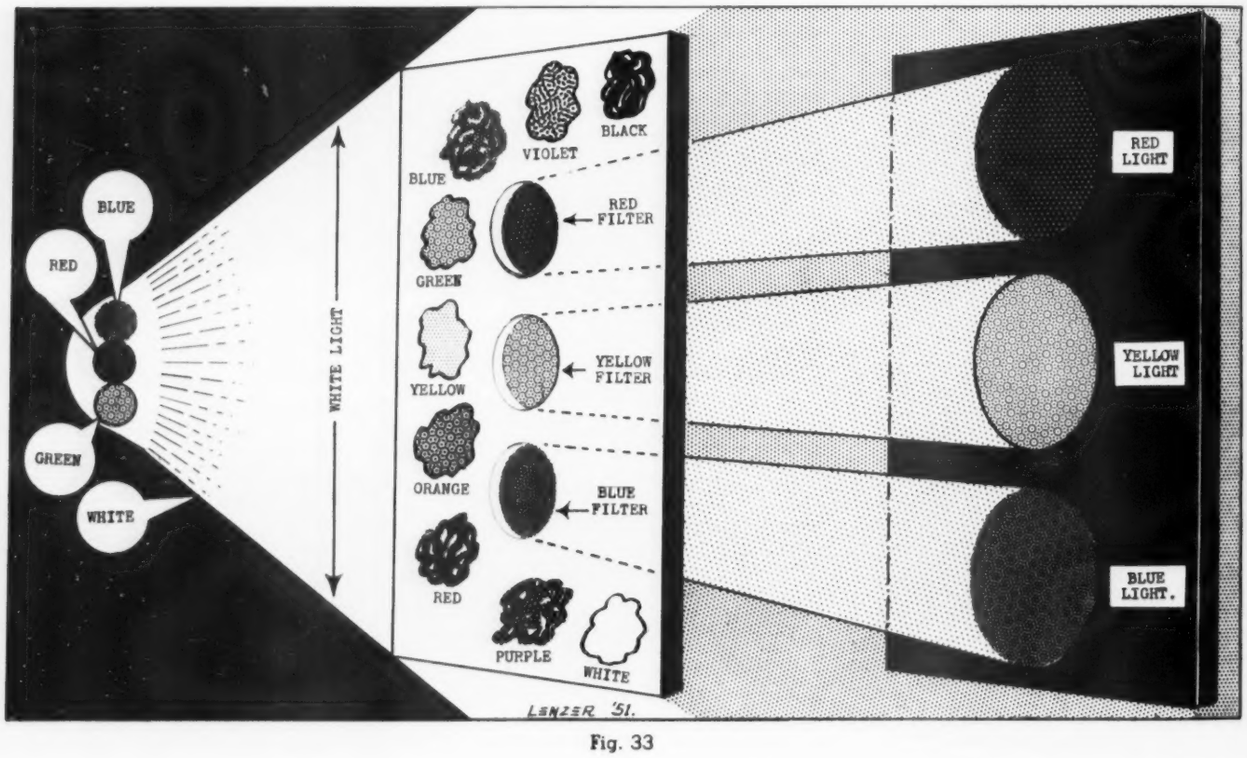


Fig. 33

Filter Number	Filter Color	Filter Number	Filter Color
K_1	Light Yellow	A	Red
K_2	Yellow	B	Green
X_1	Green (yellow)	C_5	Blue-violet
X_2	Green (yellow)	F	Deep red
G	Orange-amber		

Contrast Filters		Transmits
G No. 12	Orange	Green and Red
A No. 25	Red	Red and infrared
B No. 58	Green	Green only
C_5 No. 47	Blue	Blue only
F No. 29	Dark red	Dark red and infrared

TABLE I

Color of Subject	Filters to Render Lighter	Filters to Render Darker
Yellow	K_2, G or A	C_5
Orange	G or A	C_5
Red	A, F, or G	C_5 or B
Green	B, G, X_1, or X_2	C_5 or A
Blue	C_5	F, A, G, or B
Blue-green	C_5 or B	F or A
Pink, Magenta	F or A	B
Purple	C_5	B

TABLE II

Because color filters are important in color photography and reproduction, and because their usefulness depends upon the nature of light, it is well at this time to learn a little more about light's characteristics.

Light travels in waves. The length of the waves determines the color of the light. The red waves are the longest, blue waves the shortest, with green waves at an intermediate length. If there are no waves, there can be no light. When all the waves travel together, the result is white light—the presence of all colors.

Red and green color waves combine to form yellow. A yellow object reflects both red and green, and absorbs the blue waves. All visible colors are combinations of the three primary light colors—red, green and blue. Examples:

Yellow = Red and green in equal amounts.

Orange = Red and some green.

Pink = Red and blue in equal parts.

Less red and less blue produces a darker pink.

Because of their nature, and ability to absorb certain wave lengths of light, filters appear colored when viewed in front of a white light. A filter looks yellow if it absorbs only blue waves, and transmits red and green. Similarly, a green filter looks green if it transmits green light, and absorbs red and blue. (see Fig. 33).

If we view colored copy through a green filter, the green objects or pigments will appear to be lighter, while most other surrounding colors not containing green will be absorbed by the filter, and will seem to be black.

To meet the challenge of reproducing the thousands of different color pigments, shades, tints and hues, there are more than a hundred light filters, all of different colors and absorptive characteristics. These can be broken down and classified into three groups:

A — COMPENSATING FILTERS: These restrain certain rays of the spectrum, without absorbing them completely. Yellow filters belong to this group. The action of blue rays is restrained; this is more pronounced as the filter color deepens.

B — CONTRAST FILTERS: These are capable of totally absorbing certain light rays and are used to intensify or lighten certain particular colors in a subject. To diminish a color or to reproduce it as white, the filter used should freely transmit the wave lengths of light reflected by that color. The photographic emulsion must of course be sensitive to the colored light transmitted by the filter.

With the correct combination of filter and plate, it is obvious that the emulsion can only record those areas where the subject being photographed reflects the colors transmitted by the filter. It is also

TABLE III

Color to Photograph	Color of Filter	Sensitive Emulsion
Yellow as black	Blue	Panchromatic
Yellow as black	Blue	Orthochromatic
Yellow as black	None or blue	Color blind
Yellow as white	Red or orange	Panchromatic
Yellow as white	Yellow or orange	Orthochromatic
Yellow-green as black	Blue	Panchromatic
Yellow-green as black	Blue	Orthochromatic
Yellow-green as black	None or blue	Color blind
Yellow-green as white	Green	Panchromatic
Yellow-green as white	Green or yellow	Orthochromatic
Orange as black	Green or blue	Panchromatic
Orange as black	Green or blue	Orthochromatic
Orange as black	None	Color blind
Orange as white	Red or orange	Panchromatic
Red as black	Green	Panchromatic
Red as black	Green	Orthochromatic
Red as black	None	Color blind
Red as white	Red or orange	Panchromatic
Green as black	Red	Panchromatic
Green as white	Green	Panchromatic
Green as white	Green or yellow	Orthochromatic
Blue-green as black	Red	Panchromatic
Blue-green as white	Blue or green	Panchromatic
Blue-green as white	Blue or green	Orthochromatic
Blue as black	Red or orange	Panchromatic
Blue as black	Yellow or orange	Orthochromatic
Blue as white	Blue	Panchromatic
Blue as white	Blue	Orthochromatic
Blue as white	None	Color blind
Violet as black	Green	Panchromatic
Violet as black	Deep yellow	Orthochromatic
Violet as white	Blue	Panchromatic
Violet as white	Blue	Orthochromatic
Violet as white	None or blue	Color blind

obvious that, where a filter completely absorbs the rays of light reflected by particular colors in the copy, no effect is produced on the emulsion. Those colors thereby being reproduced as black.

C — SEPARATION FILTERS: This group is comprised of filters which separate the light into three primary colors for reproduction purposes.

Names of Filters

Color filters are known by the all inclusive name of Wratten. The color of the filter is designated by number, a letter or both. No particular order to the number or letter is given. It is necessary, therefore, to learn each designation separately, Table I.

In photographing bright, pure colors, the filter effects for such colors will be more pronounced than the results of photographing dull colors—colors with more grey in them. It is worth noting here, that the tint or pigmentation of the cardboard, paper stock or textile, upon which the original art is produced, will tend to contaminate, dull, or cause the pure pigment to become greyer.

Impure colors usually can be separated from each other by the use of the proper filter. It is difficult however to make such colors print as white, or even to cause them to print as black.

Rules for Contrast Filters

To render a color lighter, a filter of the same color should be used.

To render a color darker, a filter which absorbs the color should be employed.

The best detail within the colored copy is generally obtained when the subject is photographed so as to appear lighter.

The most suitable filters for light or dark rendering are shown in Table II.

Don't use the moron's logic, and say "If the medicine is so good, I'll take a double dose and get well faster".

It is not possible to add to the contrast by using two filters together. Example: Reds and blues cannot be made light by using the A and C_5 filters together, because, if they are combined, the A filter, absorbing all colors but red, would stop the green and blue light, while the C_5 filter, absorbing all colors but blue, would stop the red and green waves. The result would be that no light would be transmitted, and consequently no image would be recorded.

Color Contrast

Many originals submitted for reproduction are not monochromatic. Such originals must be treated differently in order to secure accurate reproduction. It is frequently necessary to alter the relationship of the colors in the copy. The duplication may require that a certain color be reproduced as white or perhaps black. In such instances, a photographic emulsion of a certain sensitivity, if used, may alone produce the correct result. If the selected emulsion is unable to give the desired effect, a filter must be used.

The filter permits the subtraction of certain wave lengths from the light reflected by the copy. Occasionally, a drawing or photo print which is badly stained, may have to be copied.

In order to make a reproduction of the original, without permitting the stain to be photographed, a corrective filter must be used, so that the stain may be eliminated as completely as possible.

Correction Filters

If the stain is yellow, it can be made extremely lighter by using a filter of the same color, but better still, using a filter of a darker shade of yellow, will tend to eliminate the stain entirely. In copying a telegram, or a letter which was typewritten on yellow paper, the same principle applies. In any case, the background or objectionable stain can be made to appear white by using a filter of the same color or a trifle darker.

In Table III are indicated the particular emulsion and filter best suited for the photographic reproduction of colors in line and halftone work.

(*To Be Continued*)

Questions and Answers

That may be of value to you in offset-lith platemaking and pressroom from NAPL Technical Forum

By ADAM HENRI REISER

HERE is a cross-section of the many problems brought to the attention of the Saturday Technical Forum at the Nineteenth Annual Convention of the National Association of Photo-Lithographers, at Buffalo, N. Y., September 5, 6, 7 and 8. Many other questions were presented to the panel but the ones printed below with editorial comment were selected because they are of interest to our readers.

The panel which sat in judgment on these questions was composed of the following members: William J. Stevens, Past President, NALC, Miehle Printing Press & Mfg. Co.; Andrew Balika, Mechanical Supt., Copifyer Lithograph Corp., Cleveland; George Hammer, Quality Control Mfg., Forbes Litho Corp., Boston; Anthony Capello, President NALC, Joseph Hoover Sons; Philadelphia; John Kronenberg, S. D. Warren Co., Boston; Michael Bruno, Research Director, LTF, Chicago; Carl Gerbing, Vice President, Rochester Litho Club, and Superintendent of Rochester Folding Box Co.

Is it necessary to heat an albumin plate after it has been coated?

ANSWER: General practice includes the heating of the plate while the coating is being whirled to it. The coated plate must be thoroughly dry, otherwise the coating will absorb water and the image will tend to leave the plate during the run. General agreement, however, was reached as to the degree of heat applied where zinc is concerned and that this is not to exceed 150 deg. F.

EDITORIAL COMMENT: Speaking for egg albumin coatings only, experience seems to indicate that as little heat be used as is consistent with shop conditions. Realizing that coatings tend to get in balance with surrounding atmospheric conditions, it is imperative that the coating be exhausted of its moisture content only to the degree sufficient to arrive at, or close to the balance. It is always useful to remember that heat seems to cause hardening of the coating somewhat as does exposure to light, and for that reason difficulty is usually experienced with the removal of the non-work areas in development when too much heat has been applied to the plate. On a very dry day the moisture tends to leave the coating without heat and for that reason little if any need be applied. In fact, on dry days no heat at all is used.

Radiant heat which is supplied by heating pipes installed in the floor, is being considered in the erection of a printing plant. What experience is had with this type of installation?

ANSWER: With no personal experience in the matter, the panel felt the installation would offer only a partial answer to the dehumidification or air-conditioning of the plant since the heating would offset only the temperature of the room. As a matter of actual fact, it was felt that the stacks of paper resting on the floor over the pipes might set up paper conditions injurious to the best performance of the paper in its run through the press. Uneven drying from the bottom of the pile might introduce wrinkles in the press.

EDITORIAL COMMENT: Recent opinions on radiant heating installation stresses two factors: (1) Where freezing temperatures are encountered, antifreeze must be included in the system; (2) Water must be kept in the pipes at all

times. While this has nothing to do with the performance of paper left in stacks on the floor it is a factor in the operation of the system. However, it is questionable whether heating emitted by this system would be so concentrated in sections over the pipes as to cause trouble. Children play on floors where private houses are heated in this manner.

What would be the best possible procedure to follow in the reproduction of a 120 line halftone photoengraving that must be reduced 50%?

ANSWER: Considerable success has been experienced with the use of the fine-line developer in these cases but with the straight line-shot pickup at same size focus showing a tendency to lose detail, meticulous care is required to avert an over-emphasis of this fact when the copy is reduced. Rescreening seems to be the best answer. However, much depends on the copy and the skill of the photographer. Besides combining the proper screen angle with the proper separation and screen, the skillful cameraman may decide to develop the negative for the fine tones, say the 10 to 15% tones, and then get the true value of the 75 to 80% tones by cutting back locally or even by giving the whole negative a flat cut with Framers reducer.

What is a good ink to use for reproduction proofs?

ANSWER: A reproduction ink with a red-brown base has been developed to cover up the hollow centers in the letters or type characters. This ink should be kept to a heavy consistency with a varnish that is not too long. *Printing Transparencies*, a publication that may be gotten from the Supt. of Documents, Government Printing Office, Washington 25, D. C., gives advice on inks for reproduction proofs.

Is there an acetate sheet that may be used as a substitute for glass in the stripping of regular film or strip-film in offset lithography?

ANSWER: A press-polished Vinyl Acetate material coming in sheets only, is available but is found too unstable when used in sizes larger than 24 in. by 32 in. Fibre Glass manufactured by the Fibre Glass Corp., has found some use in the industry. It has a resin coating and being pre-shrunk has been found fairly stable.

EDITORIAL COMMENT: Any of these materials may be coated to receive a blue image for the purposes of registration just as is done with glass. But while their main advantage lies in comparative freedom from breakage, the surface they present is subject to razor cuts and abrasions to a much greater degree than glass. For that reason they are practically a one-time product. Of course, it is far more economical to strip a job with strip-film on an acetate sheet with an adhesive for the purpose of storage than it is to use glass. Not only is the danger of breakage eliminated but the initial cost as well as storage space, among other things, is more reasonable. Coating both sides of the acetate sheet with collodion will keep the sheet flat during wet stripping operations and permit a minimum of curling. But for accurate register and a many-time use of the base, glass still has the nod.

What is the largest sized Vinyl sheet available?

ANSWER: 51 in. by 150 in. used in airplane templates.

Are there any metal plating solutions or etches which could keep the water fountain system clean?

ANSWER: The best cleaner yet developed is the application of a rag and pumice powder plus elbow grease in a scrubbing operation. Use of a stainless steel or aluminum roller, instead of the brass water fountain roller usually seen in the system, would help in the direction of repelling the ink.

What can be done if the water builds up at the ends of the dampeners yet without scum resulting?

ANSWER: Releasing some of the spring tension will keep towing the rollers at a minimum permitting the water to concentrate at the ends of the dampeners.

EDITORIAL COMMENT: This seems again apparently to be a matter of interpretation. What is meant by ends? How far in is the end? At a convention some time ago, enlightening paper was read, in which reference was made to a pet cock set up at either end of the water fountain which permits moisture dispensing to the extreme ends of the dampeners where experience has found a need for it. Here we have a case where catchups at the end necessitated additional moisture, whereas the question of this convention indicates too much moisture finding its way to the ends. It may be that a change in gear ratio at the motion is indicated, dispensing less moisture over the whole plate. It could be that excessive moisture has naturally gravitated to the ends.

What is the best way to specify the moisture content of the paper being ordered?

ANSWER: Two ways are available: (1) Specify the percentage of moisture required in the paper to best fit operating conditions; or (2) Specify the humidity conditions in the pressroom where the paper will be run. Both methods permit the papermaker to send the paper best suited to your plant.

Why is one paper at a 6% moisture content in balance with a relative humidity at 40 while another paper at a 6% moisture content is in balance with a relative humidity at 50?

ANSWER: Many answers to this state of affairs may be correct. First, mills use a wide variety of paper making material. Take the main ingredient, pulp, for illustration. How varied are trees of the same family coming from widely scattered areas used in the process of paper-making? Second, the treatment of these materials differs as the plants themselves. Third, the blinds vary from mill to mill. Fourth, each mill may have more than one paper pigment being used in a batch. And so on, ad infinitum. In fewer words, the combination of the variables react differently even though the measuring stick used in the industry is standard.

What is the best way to determine relative humidity in a pressroom?

ANSWER: Use of the Taylor hydrometer is best for all practical purposes.

Is it customary to see more wavy edges or more tight edges on paper stock these days?

ANSWER: Paper lying other than flat always indicates a change in the moisture content of the pile. Wavy edges indicate that moisture is being taken on, and usually those wavy edges lie across the grain while the edges parallel to the grain lie flat.

A lithographer appreciates the need of air-conditioning in the plant but finds that due to limited funds he can only install the conditioning in camera room and platemaking room. Will this prove satisfactory?

ANSWER: The stock answer is "to get an air-conditioning expert." But let's see, if we can help. Installation of the unit being discussed revealed that it would drop the temperature in the room but not the relative humidity. At times it had been found to actually increase the relative humidity. However, there is an LTF Bulletin on air-conditioning that should be of assistance in this matter. One large plant in the East, it was noted, using this unit, had benefited by keeping its platemaking room at a temperature between 60 and 65 deg.

(Continued Next Page)

Deep-etch plates go blind on the press after 2000 impressions. What can be done to prevent this?

ANSWER: Two possibilities for this occurrence were explored. First, the developing ink wears off; Second, a poor lacquer coating is present due either to the developing and etching operation, or an imperfect alcohol wash. Suggested remedies were the application of heat through the arc lights being played on the back of the plate before the application of the lacquer.

EDITORIAL COMMENT: I suggest that the many variables present in the average offset-lith shop makes it a tribute to the platemaker when plates come off the production line in regularity without press troubles resulting. Up to this time, very few scientific methods of checking each step other than rule-of-thumb methods employed by the craftsmen have been developed. True, the exposure guide was a big step in that direction. Now there remains to be developed a staining method or colored light examination before the application of the base to uncover the presence of any foreign substance in the work areas or cuts (as they are more generally known). Of course, when a plate comes up blind following the platemaking operation, those of us wise men charged with production say wisely—you didn't wash the plate clean with alcohol; or, you didn't develop it properly; or, you dragged in some dirt from the outside of the plate.

Weren't we told only recently that in the developing operation the coating never did leave the plate entirely—that some always remained in the cuts? So some of us took to baking the back and front of the plate prior to the application of lacquer in an attempt to still further harden that coating and yield a printing image less foolproof. Others justified the baking by saying they were driving the dampness from the metal, thus giving the lacquer a firm adhesion to the metal. Others, remembering their chemistry, heated the metal to speed the chemical reaction of the substances used. I suggest that a thick application of lacquer may tend to chip off more readily than a normal application. But then terms are only relative. Some operators add castor oil to the lacquer to give the material what they call flexibility. Of course, all the above is predicated on the assumption that conditions in the pressroom are beyond reproach. There is a well-known saying in the industry to the effect that once the plate has had 1000 or more impressions run from it, the plate is the pressman's baby. Usually, the image doesn't just go without warning. Examination of the pile will show a gradual run down the scale of perfection in the sheets taken from the plate. At the first sign of variation in the quality of the sheets, steps should be taken to check into the reason for its happening. Are the rollers or dampeners set right or have they gone out of adjustment? Are the dampeners clean, or are they just another set of inkers? How about the fountain solution pH? Properly made deep etch plates can be run with clean water to start. Why then kill the lacquer and its grease affinity right from the start with a very acid fountain solution?

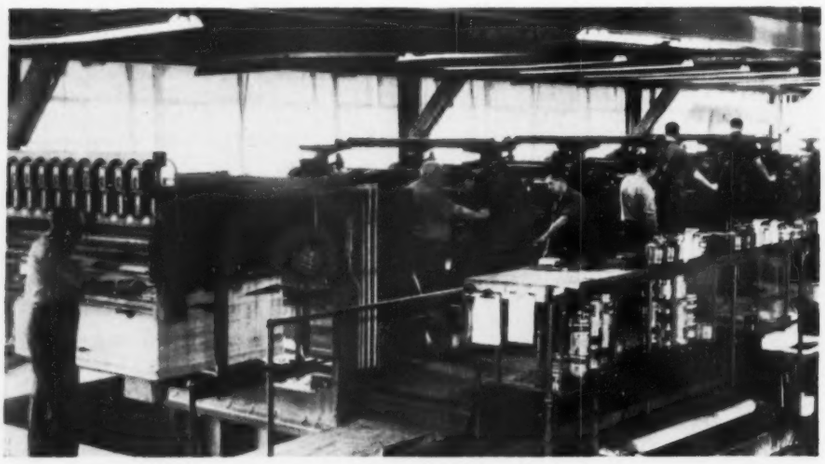
What can best be used to hold down the negative on the Vinyl sheet base?

ANSWER: Use an adhesive rather than a Scotch tape. The latter tends to creep, thus inducing register problems. This adhesive may be obtained from your supply house.

What can be done about wavy or baggy edges on piles of paper?

ANSWER: Use heat lamps on the ends of the paper to dry out the piles.

EDITORIAL COMMENT: Prevention is the scientific treatment of this question. Order the paper from your paper house specifying the conditions the paper will have to meet in your plant. Keeping the humidity and temperature at the points recommended for the paper will preserve its quality. But when the paper acts up, conditioning of the paper and its exposure to an air stream by hanging and turning is still the accepted method of seasoning it in color shops.



What is claimed to be the first six-color sheet fed offset press ever built is shown in operation at the Islip, N. Y., plant of the Grinnell Lithographic Co., Inc. Constructed by R. Hoe & Co., Inc., the press has completed a record run of handling 500 million pieces of printed matter during the past year. The entirely automatic 100 T. press is 60 ft. long, 8 ft. high and 14 ft. wide, and prints 50 in. by 72 in. sheets in six colors at speeds upwards of 6000 sheets per hr.

Hoe 6-Color Press

What is claimed to be the world's largest offset color press constructed by R. Hoe & Co., Inc., is reported to have completed a record run handling 500 million pieces of printed matter this past year at the plant of the Grinnell Lithographic Co., Inc., Islip, N. Y. According to E. H. Munson, President of Grinnell, in the last 12 months the six-color sheet-fed press has run off 200 million greeting cards, as well as some 300 million other printed items, ranging from gift wrapping papers to magazines, all in full color.

Weighing 100 T., the press measures 60 ft. long, 8 ft. high and 14 ft. wide, and prints 50 in. by 72 in. sheets in six colors at the rate of approx. 6000 sheets an hr. The sheets are delivered stacked and ready for shipment. The entire run is automatic.

Other work run on the press at Grinnell included art pictures, folding boxes, toy books, labels, recipe books, cloth dolls, and catalogs, as well as sheets of satin and miscellaneous textiles whenever required for any of these products.

The press is equipped with a pre-register lockup mechanism. A quarter turn of a single nut locks color plates in position on each cylinder in register with each other. Electrical controls, which shift the entire plate cylinder, can be used to make other adjustments.

During continuous operation of the press, the Hoe register cylinder front-registers and side-registers the sheet into a travelling gripper bar. This bar does not release its hold until the sheet has been conveyed, without stopping or transferring the sheet through the printing units.

Mis-registered or fractional width sheets are automatically ejected without stopping the press, before they can enter the first printing unit. To prevent a double impression after such a reject, cylinder pressures and form rollers are automatically tripped off in advance of the empty gripper bar, and then restored before the next sheet is presented for printing.

The six-color press was proposed by Mr. Munson to Hoe, who built and installed the press for Grinnell during the summer of 1949. According to the Hoe company, the press is the first six-color sheet fed unit ever built. Since the Grinnell installation, the firm has built and sold 18 units of this type.

Equipment & Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT *Engineer*, 1276 West Third St., Cleveland 13, Ohio.

When writing to us about any of the items described, and to save your time, just mention in your request the PEE symbol which appears at the end of each description.

Water Fountain Control

THE Baldwin Water Fountain Level is designed to maintain the level of the water fountain solution on offset presses within 1/8 in. without attention from the operator, according to William Gegenheimer. Sponsor claims the pH solution in the water fountain is stabilized and a more consistent dampening on the press is attained by means of the control attachment. It is further claimed that sheet spoilage due to a sudden flood of water to the fountain roller or spilled water on the feed board is eliminated. The device is available for all makes of offset presses. Additional information may be obtained by mentioning PEE No. 195 in your request.

Joe Medio, Pressroom Foreman of Brett Lithographing Co., Long Island City, N. Y., inspects the Baldwin Water Fountain Level installed on the recently erected Miehle No. 76 Four-color Offset Press at the Brett plant.

Chamois for Cleaning Rollers and Plates

D. M. STUDNER projects the idea that suitable size chamois skins are very useful in giving printing press rollers that last wiping after washing and also for wiping fine screen halftone plates. One of the main considerations in using chamois for these purposes is that the chamois skins do not leave lint, dust or other foreign matter on the surface. Mr. Studner recommends that rollers be washed in kerosene after a press run, using cotton wipers to remove the ink. Then cover the rollers with motor oil and let stand. Before starting the new press run, wipe the rollers thoroughly with chamois skin to remove the motor oil, lint and foreign matter if any. The skins are highly absorbent and the motor oil comes off easily leaving the rollers dry and ready for the press run. The fine screen halftones can also be wiped carefully, using a fresh skin.

Mr. Studner states the skins last indefinitely. By washing the chamois first in gasoline and then in warm (not hot) water with ordinary soap, the skins can be used over and over again.

The chamois skins are supplied in packages of five assorted sizes by Mr. Studner. When writing for further information please mention PEE No. 190 in your request.

Armed Forces Typecuts

INSIGNIA of the U. S. Armed Forces, cast in foundry type metal on the regular point size system, has been announced by American Type Founders. Three separate fonts are available. The first font is cast on a 24 pt. body and consists of Artillery, Infantry, Airborne, Armor, Chemical, Engineers, Military Police and Air Force insignia. The other two fonts are cast on a 36 pt. body. One consists of Artillery, Infantry, Airborne, Armor, Engineers, Signal, Quartermaster, Medical and Air Force insignia. The other contains Navy Eagle, Army Eagle, Coast Guard, USMC, Waves, Wacs, CPO, Ordnance, Navy Wings and Air Force Wings insignia. Each font comprises two full foundry lines of assorted cuts. If further information is desired, please mention PEE No. 192 in your request.

Cleaning Gravure Press Removable Ink Fountains

THE Dixie Cup Co., Easton, Pa., wanted a better way by which its Weiss enclosed ink fountains on Champlain rotogravure presses could be cleaned. The usual procedure was to clean the removable fountain parts with ink solvent. Fire regulations would not permit cleaning with ink solvent in open tanks in the pressroom or the building, because the solvent was both explosive and toxic. All parts had to be carried from the building, cleaned and returned. The improved method for cleaning the parts is as follows:

Two fixed tanks, each 4 ft. long, 3 ft. wide and 18 in. deep, with overflow pipe 6 in. below the top, were constructed in the pressroom. These tanks are filled with water (90 gal. to each tank). Then 45 lbs. of Target All-Purpose Cleaner are dumped into the first tank. The temperature of the water is brought up to 200 deg. F. with live steam. All removable fountain parts, including ink applicator, doctor blade and ink fountain supply tank with pump, are immersed in this solution for a period of 35 to 40 min. or until all ink is removed. The parts are now transferred to the other tank where they are rinsed in clear water.

Target All-Purpose Cleaner, it is stated, is entirely safe and may be used for cleaning all metals except aluminum.

The Cleaner (a compound in dry crystalline form) is made by Chemical Mfg. & Distributing Co. Full information will be supplied by *Printing Equipment Engineer* upon request. Please mention PEE No. 181.

View of gravure press ink fountain parts cleaning tanks in plant of Dixie Cup Co., Easton, Pa. Because of non-hazardous nature of Target All-Purpose Cleaner solution, tanks are located in the pressroom.

Humidity Indicator — The Airguide direct-reading hygrometer has been developed for use in printing plants and paper storage warehouses where the maintenance of constant humidity conditions is essential. The position of the indicating hand on the instrument gives the percent of relative humidity directly. According to the sponsor, Fee and Stemwedel, Inc., the hygrometer registers exact humidities from 0 percent to 100 percent and will operate in temperatures to 175 deg. F. A floating type humidity sensitive element operates on absorption principle. Diameter of the Airguide is 4⅝ in.; depth, 1½ in. Additional information may be obtained by mentioning PEE No. 186 in your request.

Illustrated Broadside

THE Mergenthaler Linotype Co. has issued an illustrated broadside in which is explained the new and simplified engineering features which are designed to make Blue Streak Comet suited to Teletypesetter operation. The folder also contains specimen showings of the more than two dozen Linotype faces specially designed for Teletypesetter use. Such features as the Linotype Electric Quadder, the single-unit reed rack, and the new, more sensitive distributor clutch are shown and described in the Comet folder. Along with a comparison of sizes of Linotype's TTS unit matrices is an explanation of the basis for determining "set," and the 11 unit groups which control the design of every character in each Teletypesetter face. The broadside is available on request from Mergenthaler Linotype Co., or through *Printing Equipment Engineer*, in which event please mention PEE No. 196.

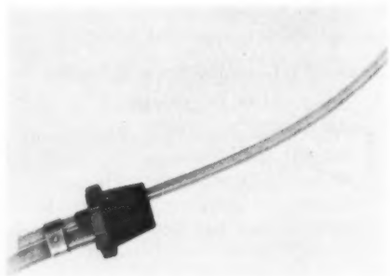
Three-Dimensional Planning

THE "Visual" Planning Equipment Co., announces an 80 page catalog available on request. This Catalog contains the "Whys" of 3-dimensional planning, explains the functions and advantages in detail, and in it are outlined and illustrated "Visual's" Repro-Templet System of producing reproduction prints. In addition, there is an itemized list of over 6000 standard stock items—machine tools, material handling equipment, shop equipment, office-planning equipment, etc. When requesting a copy of this catalog please mention PEE No. 187.

Direct Positive Paper

DEVELOPMENT of a new photographic contact paper that produces a positive photocopy in one step by transmitted or reflected light has been announced by Remington Rand Inc. Known as G-151 Direct Positive Portagraph Paper, its main use will be in making readable positives from one-sided translucent or transparent originals. According to the sponsor, it will also work by the reverse and reflex copying methods.

The direct positive paper is adaptable to the Remington Rand Portagraph or any other standard photocopying equipment. It is color-sensitive (orthochromatic), and can be used with colored stocks, inks and stamps. In contact printing from letter, for example, the letter is placed face down on the copy glass and then the direct positive paper is placed over it, emulsion side down. Prevailing methods of processing and operation may be used. Please mention PEE No. 182 when writing for further details.



Safety Air Vent Spout — The GS safety air vent pouring spout is designed to assure a smooth even flow of acid without spurts or splashes when draining carboys, according to General Scientific Equipment Co. The unit is made of a acid-resistant rubber and plastic tubing. The spout has a capacity of 5 gal. per min. When requesting further information, please mention PEE No. 183.

Truck Catalog

THE Elwell-Parker Electric Co. has released its new condensed general catalog which covers high lift and low lift platform trucks, fork trucks and mobile cranes. Capacities and dimensional specifications on each class of truck are listed, as well as a brief description of major construction features. The 12 page, two-color catalog also includes several materials handling ideas which are presented in illustrated form. Copies are available by mentioning PEE No. 188 in your request.

Blanket Thickness Gauge

OPERATING instructions for the Offset Blanket Thickness Gauge sponsored by Federal Products Corp. and developed by the Lithographic Technical Foundation, Inc., are listed in an eight page, two-color booklet issued recently. Several illustrations are used in the booklet to explain the specifications, operation and care of the instrument. The gauge is designed to obtain the thickness of the offset blanket after it is under tension around the cylinder. It can also be used to measure packing and paper thickness. A complete description of the instrument appeared in the June 1951 issue of *Printing Equipment Engineer*. The booklet is being distributed by Fuchs & Lang, Div. of Sun Chemical Corp.; Roberts & Porter, Inc.; Sinclair & Valentine Co.; International Printing Ink Div., Interchemical Corporation; and Rapid Roller Co. Copies may be obtained by mentioning PEE No. 185 in your request.

Air Conditioning Units

CENTRAL system zoning Weathermakers, designed to provide independent control of air conditioning in separate areas of a building through a single unit have been announced by Carrier Corporation. Five sizes are available with air conditioning capacities ranging from 12 to 58 T. The number of

Improved Rosback Auto-Stitcher — Optional accessory equipment available for the Model 202 Rosback Auto-Stitcher now includes provision for stagger stitching. It is pointed out by the sponsor, F. P. Rosback Co., that stagger stitching is sometimes desirable, particularly on thin booklets when stitches are placed directly on top of each other may have a tendency to break out under pressure of the cutter clamp when the booklets are being trimmed. One adjustment on the machine enables the operator to change from stagger stitching to straight stitching, or back again, when desired. Sponsor states the attachment must be incorporated in the machine at the factory at the time the machine is built. Speed range on the Model 202 has been increased to provide stitching speeds of from 23 to 68 books per min. Please mention PEE No. 191 when requesting further information.

zones possible with the factory-built damper section varies from five for the smallest size to 14 for the largest. Intermediate sizes include 7 and 10 zone units.

Carrier officials said the units are designed for office or other multi-room buildings, manufacturing plants, and other spaces where cooling or heating loads vary in different rooms or areas due to the changing positions of the sun. In manufacturing plants, start-up or shutdown of heat producing power equipment in various parts of the plant or the need for different processing temperatures makes zoning equipment especially applicable.

The Weathermakers are of the horizontal blowthrough type. Damper control for separate zones is provided through a double outlet arrangement, with one outlet supplying cooled and dehumidified air and the other supplying warm air. These twin outlets are divided into separate dampering compartments.

An independently operated double damper in each twin compartment regulates the proportion of warm and cool air for the zone, shutting down on the supply of one as the other is increased.

Although normally mounted on the unit, the entire damper section can be set up in a location remote from the Weathermaker by installing warm and cool air ducts to the damper. Or the damper section may be eliminated and double ducts—each pair equipped with its own damper—may be run to each conditioned space, thus increasing the number of possible zones.

The units include an improved centrifugal fan section which, according to the sponsor, provides quiet, high air capacity operation at low rotating speeds. A diffuser section through which air passes to the cooling and heating coils is claimed to save as much as 10 per cent in horsepower requirements.

All units are sectionally constructed for handling and installation. For additional information, please mention PEE No. 194 in your request.

Methods of Justification

By FRANK DeWITT*

*Director of Graphic Arts Research, Commercial Controls Corp., Rochester, N. Y.

JUSTIFICATION is taken for granted by the layman and many compositors have forgotten how much trouble it was to justify properly their first galley of hand set type. But the few hours spent by the apprentice learning the relative thicknesses of the various spaces and their combinations are but as a few six point 5-em spaces in an overflowing hell box when compared with the days and months spent by composing machine inventors confronted with the problem of justification.

The early composing machines were often merely mechanical devices for assembling foundry type. After the keyboard operator produced enough words for a line, another operator spaced them out to the proper length. Eventually justifiers were added. Sometimes these were the inventions of men other than those who contrived the original composing machine.

The inventors of hot metal composing machines found the problem of justification just as difficult. According to Legros and Grant in *Typographical Printing Surfaces* the sum of $400 thousand was once paid for the right to use a certain mechanical justifying device.

The ideal justification system for one kind of composing machine rarely works as well for another method of mechanical composition. This accounts for the many methods of justifying type composition in use today.

Several of the effects produced by different methods of justification are shown in the lines in Fig. 1. The first line is set with normal word spacing. To justify the line, the white space at the end of the first line must be distributed between words or between letters. The second line shows this space divided equally among all the word spaces.

The third and fourth lines show step or unit word spacing. In actual practice this is not readily distinguished from equal word spacing. In the first example shown the effect has been emphasized by using a relatively large unit of space so that the difference in space between the first and second spaces is quite apparent. Here 11 units of space are divided among 5 word spaces. This results in 3 units being used for the first word space while the last 4 word spaces are only 2 units wide. If a smaller unit is used as in Line 4, the difference in word spacing is not apparent. Here 33 units are divided among 5 spaces, as follows: 7-7-7-6-6.

Line 5 shows justification put between letters. Here the space is equally divided. In line 6 the space is optically apportioned and limited to the capital letters to produce a more pleasing effect. This corrective spacing of both letters and words is a common practice in hand composition but is a less frequent custom on keyboard composing machines.

Percentage spacing is shown in Line 7. Here the space after each letter is proportioned to the width of the letter. This method of justification is used in at least two methods of composition now commercially available.

Equal word spacing, equal letter spacing and percentage spacing were all covered in patents issued to Talbert Lanston, inventor of the Monotype, in 1877.

Another possible method of justifying is shown in Line 8. Here the line has been stretched photographically.

As mentioned previously, the various means of justification have been exaggerated for better illustration of the principle. In normal use the particular method used to achieve lines of equal length is not apparent to the reader.

Each of the above methods has its particular advantage. Some machines permit more than one method and practically all make provision for fixed spaces where necessary. The ideal composing machine would permit the operator to use with equal facility whichever one was most desirable.

JUSTIFICATION is both art and science.

Line 1—Unjustified Line

JUSTIFICATION is both art and science.

Line 2—Equal Word Spacing

JUSTIFICATION is both art and science.

JUSTIFICATION is both art and science.

Lines 3 and 4—Step (or Unit) Word Spacing

JUSTIFICATION is both art and science.

Line 5—Equal Letter Spacing

JUSTIFICATION is both art and science.

Line 6—Optical Letter Spacing

JUSTIFICATION is both art and science.

Line 7—Percentage Letter Spacing

JUSTIFICATION is both art and science.

Line 8—Distortion Justification

Fig. 1.

Straight from Shoulder

Discussion presented by Linotype Company President to SNPA meeting under title of "Parasites or Partners"

"I AM completely convinced that an industry can be progressive and successful over a long period only if all segments of the industry are working harmoniously toward common ends," said Martin M. Reed, President of Mergenthaler Linotype Co., in a recent address before members of the Southern Newspaper Publishers Assoc. meeting in Hot Springs, Ark.

He pointed out that the greatest barrier to a better and closer cooperation among publishers and suppliers of their equipment is a rather widespread lack of mutual confidence and understanding. In years gone by, Mr. Reed noted, there has been much confusion and little agreement in the newspaper industry as to what it wanted or needed from equipment manufacturers.

Mr. Reed candidly declared that equipment manufacturers, of whom the Linotype Company is representative, have also been guilty in the past of a degree of complacency and indifference. They have sometimes failed to assume the leadership that was their responsibility as partners in the publishing business. On the other hand, newspaper executives have not been sufficiently interested in the mechanics of production to take advantage of technological advances and long-range production planning programs.

"Publishers seemed to forget, that assuming any given level of sales volume, profits are made or lost on the production side of the business. While there has been great competition for outstanding editors, feature writers, and circulation men, there has been little rivalry for top-notch production men.

"The replacement cost of composing machines in daily and weekly newspapers in this country is at least $300 million. Yet, there is not one single school in the United States specifically training machinists to keep that equipment in good repair."

Mr. Reed, whose talk was entitled *Equipment Manufacturers — Parasites or Partners*, pointed out that in 1946, following the war, newspapers were in a difficult position. High costs were strangling the industry, and yet only a few people in the industry had true and reliable cost figures. Nowhere in the industry were there common cost denominators. Equipment manufacturers, therefore, were unable to establish a nation-wide cost pattern upon which they could plan the development of new products capable of reducing these costs.

In the absence of a real understanding of the production side of the business, publishers began to look for a magic carpet to carry them away from mounting costs. The things closest at hand bearing any resemblance to the magic carpet were typewriter composition and photo-composition. Yet, the speaker declared, he has never seen definite, down-to-earth answers to the practical questions these devices raise, such as their productivity, assimilation into industry, application, performance requirements, availability, actual cost and what net savings the new equipment would produce.

"Fate has a strange way of playing tricks on all of us," Mr. Reed noted. "For years, we have all heard of the imminent revolution in newspaper production methods. Always, however, the prophets of revolution have looked over the horizon for the stuff of which the revolution would be made.

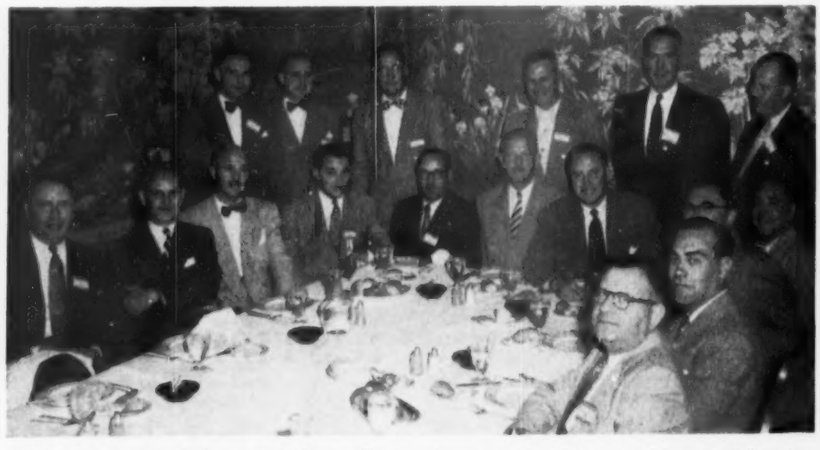
"It seems ironical to me," said Mr. Reed, "that the closest thing to a revolution in the graphic arts since the day Mergenthaler invented the Linotype machine has sprung up under our very noses. I refer, of course, to the amazing and continuing swing to tape-fed typecasting machines—and the concurrent growth of wire circuits for the transmission of precomposed material. It is my personal opinion that you are seeing in that growth the most significant production development of the past 50 years. The potential is tremendous. If that potential is realized, you may—for the first time—see a reversal in the trend toward more and more newspaper casualties.

"Some publishers have not recognized all the problems inherent in the adoption of a new production method. They have looked upon teletypesetting as a complete package which, without planning, patience and attention, can be adopted lock, stock and barrel—and be left to run itself. Nothing could be further from the fact of the matter. The monetary and other benefits of tape operation do not come for nothing."

In summing up, Mr. Reed said that the future of the Graphic Arts industry, and that large segment of it which is composed of newspapers, depends upon the collateral advantages that a close supplier-buyer relationship can produce.

"It is up to the equipment manufacturer," Mr. Reed continued, "to deter-

(Continued on Page 93)



Printers Supply Salesmen Meet — Shown above are the officers and board of directors of the Intl. Printers Supply Salesmen's Guild at a recently held meeting at the Hotel Statler, Boston. Seated at the table from left to right are: W. J. McWilliams, Chicago Branch Mgr., and Norman Steed, Boston Branch Mgr., both of Miehle Printing Press & Mfg. Co.; Wendell Salmon, President, Salmon Printing Ink Co.; Sidney Langford, Cleveland Branch Mgr., Sigmund Ullman Co., Div. Sun Chemical Corp.; Myron Lewis, *Graphic Arts Monthly;* Norman Rowe, Ideal Roller & Mfg. Co.; Carlton Mellick, Vice President, Miehle Printing Press & Mfg. Co.; Alfred Walden, Walden Sons & Mott; John Morehouse, Cleveland District Mgr., Harris-Seybold Co.; Malcolm O. Brewer, New York Representative, Miehle Printing Press & Mfg. Co.; and Lee Augustine, Vice President, Printing Machinery Co. Standing from left to right are: Robert Harrison, Philadelphia; Lou Croplis, Cincinnati Branch Mgr., and Carl Nelson, New England Branch Mgr., both of American Type Founders; James Donaldson, Buffalo; Malcolm Burroughs, Dexter Folder Co.; and W. W. Hicks, Miller Printing Machinery Co.

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In just one year's time,
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Set in Linotype Gothic No. 20

(This illustration was produced on a Fairchild Scan-A-Graver in the plant of the La Salle (Ill.) *News-Tribune*, and is printed from direct in this issue of *Printing Equipment Engineer*. Original photo by *News-Tribune* staff photographer.)

Mechanical Supt. John N. Barron of the La Salle (Ill.) *News-Tribune:* and 1950-1951 President of the Illinois Newspaper Mechanical Conference is posed with the newly-elected 1951-1952 officers. This year's conference was held at Hotel Kaskasia, La Salle on September 20 and 21.
Left to right, the executives are identified as follows: Immediate Past President John Barron; President, James B. Mawdsley, Composing Room Supt. of the Alton (Ill.) *Evening Telegraph*; Vice President, Verne Bradley, Mechanical Supt., Kankakee (Ill.) *Daily Journal*; Secretary-Treasurer, Wilbur Augspurger, Photoengraving Supt., Peoria Newspapers, Inc.; new Director, Eldon Martin, Mechanical Supt. of the Galesburg (Ill.) *Register-Mail*.
Re-elected to the Board of Directors were: Howard M. Colton, Pressroom Supt., Bloomington (Ill.) *Daily Pantagraph*; Sid Scott, Composing Room Supt., Decatur (Ill.) *Herald Review*; Les M. Phares, Composing Machinist, Champaign (Ill.) *News-Gazette;* Arthur Kramer, Composing Room Supt., Joliet (Ill.) *Herald-News*.

Illinois Mechanical Conference

THE Illinois Newspaper Mechanical Conference, held in La Salle, Ill., on Saturday and Sunday, September 22 and 23, was attended by 375 people. The conference was held at Hotel Kaskasia. For the Saturday sessions, a considerable number of smaller plant owners and managers were in attendance.

The newspaper executives present were told by MacD. Sinclair, Editor of *Printing Equipment Engineer*, that as management's duties are becoming increasingly pressing, management's activities are being devoted more and more to problems other than those in the mechanical and production side of plant operation. In view of the added responsibilities of the mechanical executive, he should take the initiative in improving himself with respect to plant operation. He can no longer be a technical expert without experience in human relations.

Dr. R. Hunter Middleton, Director of Typography, Ludlow Typograph Co., said that type is the typographer's vocabulary with all the inherent inflections of the orator. The typographer can accomplish the purposes of advertisements and please the advertiser by the proper use of type. Dr. Middleton, through comparative slides projected in large size on a screen, discussed the before and after settings of a number of pages of composition.

Betty L. Arbogast, Newspaper Production Consultant, St. Paul, Minn., discussed the subject, *So You Don't Believe in Dispatch Departments*." She said: "The primary function of dispatch—or control—is to give advertisers what they want, to give the advertising manager and his department what they want, and to give the mechanical departments what they want . . . The function of a dispatch department is to blend all of these wants of the advertisers and newspaper departments so the results will be profitable to the newspaper." She asserted that no newspaper is too small or too large for the profitable operation of a dispatch department . . . Where the functions of dispatch operations are properly understood and properly applied, the advantages to everyone concerned are usually adequate to insure full cooperation and discourage any particular convenience to one that would operate to the detriment of the whole program."

Miss Arbogast called upon Miss Agnes Henebry of the Decatur (Ill.) Newspapers, Inc., to describe the dispatch operations in her plant. The discussion, through illustration of the copy flow lines on a large chart through the various departments was illuminating. She was assisted by Sid Scott, Composing Room Supt. of Decatur Newspapers, Inc.

On Sunday afternoon, September 23, a number of group meetings were held concurrently. The Composing Room meeting was presided over by Amos M. Sharp of the Dixon (Ill.) *Evening Telegraph*. At this time, Ray C. Cook, WNU's St. Louis Manager, discussed *1952 Models with 1932 Tools*. Mr. Cook suggested four fundamental points must be considered in arranging a plant: (1) Flow of work from office through composing room composing room to pressroom; (2) Suitability of present equipment to work being handled; (3) Number of people employed in the composing room and responsibilities of each; (4) Provision for future changes and expansion. In discussing steel composing room equipment, Mr. Cook spoke of the new magnesium cases which he said reduce labor costs and wear on machinery due to lightness and ease of handling.

Plant layout was the theme of the address of John Crow, Tompkins Printing Equipment Co. He suggested that when planning a new plant, the publisher should make a sketch of what he thinks is necessary, consult with department head and get their ideas incorporated into the sketch, revise the entire plan to include 10 ft. more floor space in length and width, and then consult an arthitect.

The Pressroom and Stereotype meeting was held under the co-chairmanship of Earl Stevenson, *Wall Street Journal*, Chicago and Forrest Moore of Madison (Wis.) Newspapers, Inc.

The machinists held a meeting under the chairmanship of Les Phares, Machinist, Champaign (Ill.) *News-Gazette*. He was assisted by a panel of experts in answering questions asked directly from the floor.

The 1952 conference will be held in Alton, Ill.

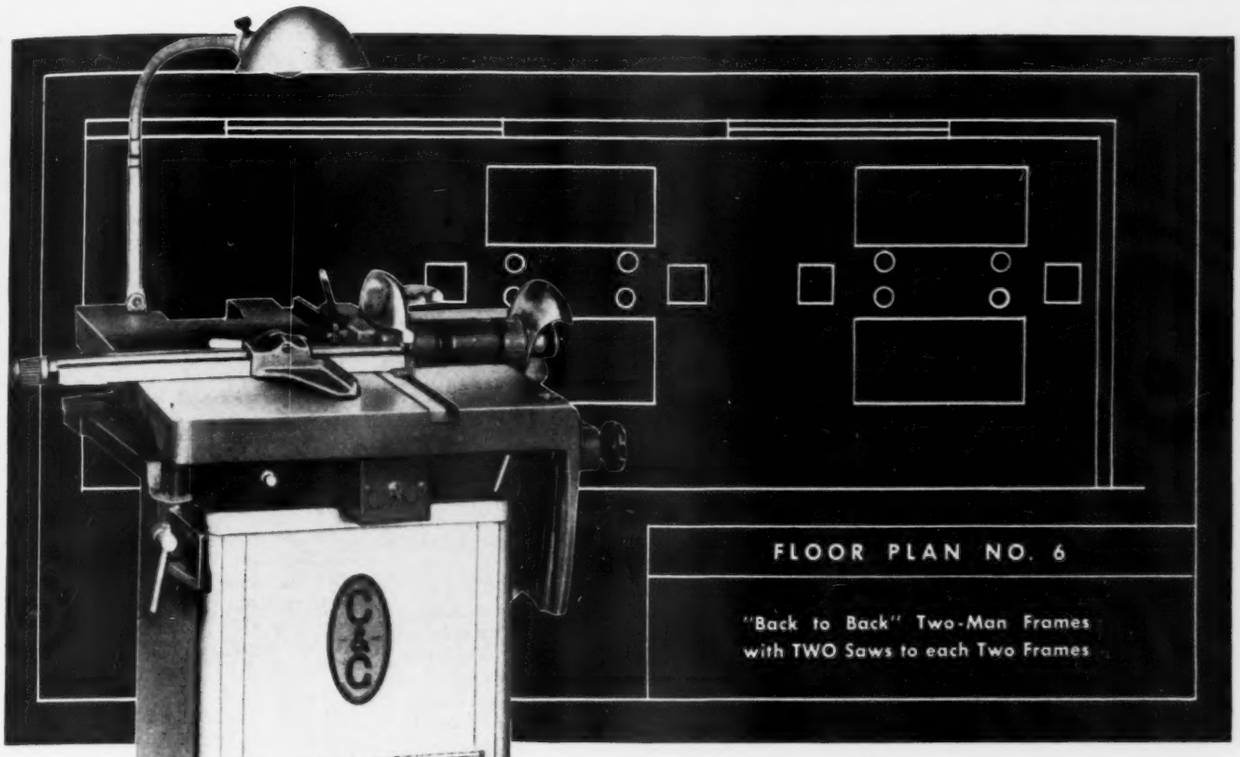
Goss Sells Plant

The Goss Printing Press Co. has sold its Battle Creek, Mich., plant to the Oliver Corporation and will concentrate its operations in the Chicago area, it was recently announced by R. C. Corlett, President. Goss has completed its new plant on a 20 A. site in Cicero, Ill., which will augment the facilities of its So. Paulina St. plant in Chicago. Further consolidation of the two plants will be made later. Goss had formerly operated the Battle Creek plant as the Duplex Div. of the Goss company.

ATF Consolidation

In a joint announcement, Edward G. Williams, President of American Type Founders, and Eugene Kling, General Mgr. of ATF's Klingrose Rotogravure Div., disclosed that all ATF web press manufacturing equipment will be consolidated at Mt. Vernon, N. Y. The move was made for greater efficiency of operation and better utilization of manufacturing facilities, according to the announcement. Concurrent with the consolidation, it was announced that a new sales office would be opened in New York at 19 Rector St. to handle ATF-Klingrose rotogravure equipment sales.

Composing Room Efficiency Centers on your SAW TRIMMER



MORRISON

Model 3-A Saw Trimmer

Today's more versatile saw. Table, 30"x 18". DeLuxe equipment includes: 73-Pica gauge and workholder. 135-Pica extension gauge, miter and lineup gauge, right and left-hand miter vise, saw grinder with dished emery wheel, trimmer grinder, universal saw blade assembly with head and trimmers. No. 20 waste receptacle, adjustable lighting fixture, motor and pulley.

MORRISON SAW TRIMMERS *Give You MORE Time-Saving Attachments*

You can't beat the versatility of a Morrison Saw Trimmer! You can perform a greater variety of work faster, easier, safer, more accurately for substantial time-savings, labor-savings, money-savings. Check the complete list of Morrison features and attachments—and you'll know why.

- Exclusive "Behind the Gauge" Workholder, offers improved visibility, safety, accuracy.
- Improved Miter Gauge with *Point* Adjustment.
- Right and Left-Hand Mitering, all miters face up.
- Miter and Lineup Gauge.
- Any-Angle Gauge for 2° to 90° angle cutting.
- Universal Saw Blade and Saw Grinding Attachment.
- Automatic Index for plate cutting and trimming positions.
- Swing-Out 135-Pica Extension Gauge.
- Requires 50% less working space.

With such an array of time-saving attachments, how can you help but improve your composing room production—with a Morrison Saw Trimmer? See one—try it. We'll gladly give you the name of a nearby owner. Or write for descriptive folder "Essential to Composing Room Economy."

Get **MORE FOR YOUR MONEY** *in Saw Trimmers...* **BUY A MORRISON**

Symbol of Operating Economy

THE MORRISON COMPANY

THE *Morrison* COMPANY

PRECISION MACHINES FOR THE GRAPHIC ARTS INDUSTRY

135 W. Melvina Street, Milwaukee 12, Wisconsin

Dry Offset Printing Plates

(Summary of address entitled Fundamentals of Dry Offset Printing Plates *delivered by Bernard Sears, Vice President and General Manager, Graphic Arts Corp. of Ohio, Toledo, O., before the Cleveland Club of Printing House Craftsmen, September 1951.)*

DRY offset printing is not a new process, but it is new in the sense of the applications to which it is now put. A recently introduced use of the process is in the printing of ruled business forms and labels by commercial printing plants. Its present status has made it practicable for printing many types of line work and type forms. The government is using dry offset plates for the printing of revenue stamps. It is also used for printing safety check backgrounds, etc., while research programs are underway to improve methods and equipment for making plates in the commercial field. The recent expanded use of dry offset is made possible by greatly increased depth of etching on magnesium plates.

Dry offset printing is really a combination of letterpress and offset printing. The term lithography was dropped because there is no water involved in the process. The high etch plate is inked and the image offseted onto the rubber blanket, and from the blanket to the paper. The amount of ink left on the rubber blanket after the blanket deposits the ink on the paper is apt to build up. It has been found that the impression contact does not remove all the ink from the blanket.

The dry offset process is a photoengraving process. Offset platemakers not presently set up to produce such plates can put in equipment to make dry offset plates, but the platemakers will have their headaches in learning how to produce them. Present cost of a dry offset plate is approx. four times the cost of a deep-etch plate.

In seeking an offset plate which possessed the qualities of long-life, rigidity and flexibility, Graphic Arts Corp. of Ohio was called upon to experiment with steel plates for offset presses. Such plates presented several mechanical problems. The steel was slow to etch which amounted to etching down at the rate of 0.001 in. per hr. In this test, stainless steel was used because of its ability to withstand long runs. Depending upon the type of steel used, it was found that by using such metal, a slow and costly method of platemaking was involved.

The conclusions drawn from these tests was that some other kind of metal had to be used. The possibility of using zinc was considered, but it was found that certain things could be accomplished with zinc in small sizes in the laboratory that could not be done with the larger size plates. Expansion from its use on Multiliths and similar size presses to its practical application for larger size presses was sought. It was found that 0.032 in. thick zinc in a large size resulted in a very uneven depth of etch because it was impossible to apply the powdered dragon's blood evenly on the plate.

Thin gauge magnesium was the metal used next because of its rigid and light weight qualities. In the early stages of development, Dow Chemical Co. promoted magnesium but was seeking commercial and industrial applications for the metal other than printing plates. Several plates were produced by Graphic Arts Corp. of Ohio using commercial sheets of magnesium and encouraging results were obtained by printing on a specially built four-color press.

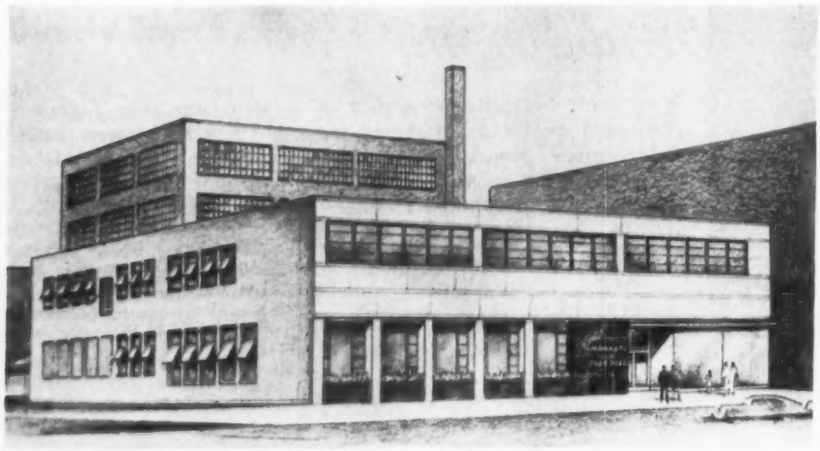
To determine the advantages in dry offset printing plates, a label job containing type and small solid areas was attempted by this process using newsprint stock. Difficulties were first experienced in feeding the sheets and from the lint in the stock appearing on the rollers and plate. The plate itself was etched to 0.012 in. depth and the dampener roller removed from the press before the run. After running 3000 imp. using offset ink it was discovered that the ink was building up on the non-printing areas of the plate. The ink was then changed in the fountain to a long bodied letterpress ink, but the form rollers had swelled in the middle to such an extent that they were hitting the plate hard and inking the plate's bottom.

In the printing of ruled business forms, the Reynolds & Reynolds Co. has found that high etch plates result in long life. This firm has printed three to four million impressions from one such plate. Moore Business Forms has reported a press run of 22 million impressions from one high etch plate. In printing from dry offset printing plates, it is apparent that the long life of the plate for line work results in an extremely economical method of printing.

In another test run at Graphic Arts Corp. of Ohio, a job was chosen that had previously been run by letterpress and which included open areas, halftones and solid bars. The selection of this particular job was made to determine the results obtained using high etch plates on halftones, solids and open areas. The open areas on the job were fairly wide. The plate was etched to only approx. 0.007 in. or 0.008 in. deep. The plate itself was 0.016 in. thick, but the press the job was to run on could only accommodate a plate 0.012 in. thick. This necessitated taking the packing out from underneath the blanket.

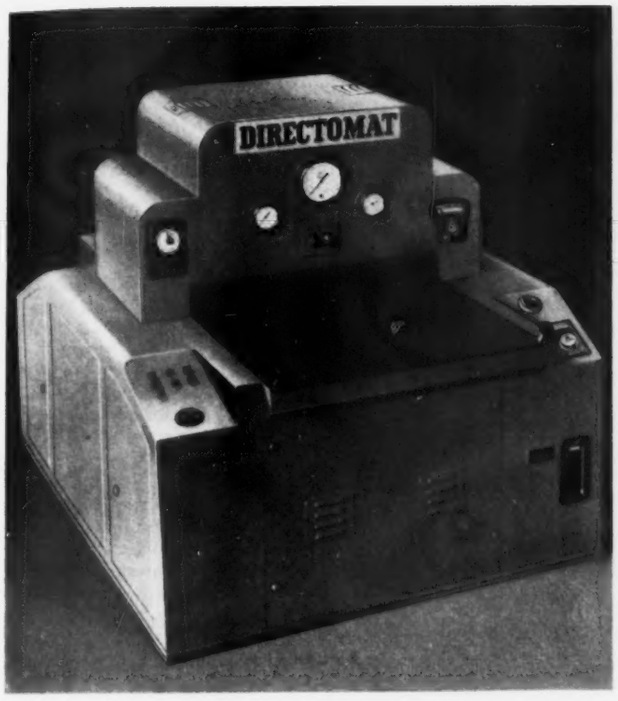
One of the difficulties encountered was not being able to obtain a black enough impression on one of the solid bars on the plate. A sheet of underlay was placed under the whole plate which resulted in printing the bottom of the entire plate. A thin sheet of paper (0.001 in. or 0.0015 in. thick) was then placed under the bar that was not printing black enough and satisfactory results were obtained. This indicated that on solid area plates, a heavy squeeze was needed. Light forms could get by without as much squeeze. It proved that some kind of makeready would be required on jobs possessing a combination of halftones, solids and open areas, and that coarse screens (60 or 65 line screen) would be successful.

Among the disadvantages of dry offset plates is that the platemaker must stay away from shoulders in etching. It is the first shoulder (the one that is closest to



Builds $300 Thousand Plant — Shown above is an artist's sketch of the new home of the Mankato (Minn.) *Free Press* valued at $300 thousand which is now under construction. Front of the 79 ft. by 92 ft. building will be of buff Mankato stone with Cold Springs black granite for trim. Side walls will be of tile, faced with tan brick. The new building will join the *Free Press* with its commercial printing plant, which can be seen at the rear in the sketch. The job printing plant will also be renovated and faced with tan cement to conform with the appearance of the new structure. The building will house a new four unit Gross press equipped with color attachments and able to produce up to a 64 page newspaper. According to C. H. Russell, Publisher of the *Free Press*, the new press will replace the present 28 page capacity press. A modern lobby, newspaper advertising, circulation and printing plant offices will be located on the first floor of the building. The pressroom will be on the first floor level in the southwest corner of the building at the left, adjacent to the truck yard. Composing Room editorial offices, a wire room, lunch room and rest rooms will be on the second floor. A modern store front and showroom is provided for the *Free Press* stationery store at the right. Engineering service was furnished by the Swift Engineering Co. of Chicago, headed by John B. Swift, President.

More LAKE ERIE DIRECTOMAT Matrix Molding Presses are in operation today than *all other makes combined!*



HEAVY DUTY DIRECTOMAT model offers extra tonnage and work area. Maximum pressure 1,000 tons. Platen area 34″ x 26″. Also available in 800 ton capacity, platen area 32½″ x 24″. Automatic precision controls. Making better mats becomes an effortless, push button operation. Ask for literature.

Undeniable proof of DIRECTOMAT advantages

Executives in the Graphic Arts are noted for believing only what they can see. We would welcome the opportunity to show you evidence of how DIRECTOMAT direct pressure mat molding can help you get better casts—in less time and with lower molding cost. Most DIRECTOMAT installations have been made as the direct result of their performance in other plants.

Write, wire or phone for a Lake Erie representative. He knows the "mechanics" of matrix molding and can help you do a better job.

LAKE ERIE ENGINEERING CORP. BUFFALO, N.Y. U.S.A.

LAKE ERIE ® DIRECTOMAT ®

LAKE ERIE ENGINEERING CORPORATION

General Offices and Plant: 568 Woodward Avenue, Buffalo 17, New York

● Leading manufacturer of hydraulic presses — 3,500 designs from 5 to 23,000 tons capacity — stereotype molding... plastics molding... laminating... die sinking... metal working... forging... metal extrusion... waste wood and plywood... rubber vulcanizing... special purpose.

Hamilton solves

the case of the wandering pressman

This million dollar mystery had printers baffled from coast to coast ***—How can we keep our pressmen from wandering away in search of an imposing surface . . . rollers . . . tools . . . ink . . . rags and benzine? How can we keep profits from wandering right out of the pressroom?***

Hamilton's Platen Pressroom Cabinet (see full report below) solved the case by putting the equipment a pressman needs in one properly designed, easy-to-work-with unit ***right at the press!*** **Yes, pressroom sleuths have all the evidence they need to know that** ***Hamilton equipment gives good men a chance to do good work!***

Hamilton Platen Press Cabinet No. 2004C01

In floor space only 47½″ by 27″ this unit gives your pressmen a 27″ by 31″ rabbeted cast iron imposing surface; 3 roller storage drawers, 30 roller capacity; 1 white porcelain enamel ink-mixing drawer; 1 tool and part drawer; 3 ink storage drawers; 2 large rag drawers; surface cabinet for quoins, benzine, etc. A completely flexible assembly to meet your own requirements. For full details on all Hamilton equipment consult your Hamilton Dealer or Catalog.

Hamilton PEAK PRODUCTION **equipment**

HAMILTON MANUFACTURING COMPANY, Two Rivers, Wis.

the top or surface) that does the most damage. It is difficult to powder large size (40 in. by 48 in.) high etch plates and to etch them evenly because of lack of suitable equipment. Magnesium will etch evenly, but it is difficult to powder the large size plates evenly.

Another drawback is in the etching time required for such plates. Research programs are now underway in which work is being done to solve these problems. Two fast etching programs are also in progress. Research has definitely established that a 9 in. by 12 in. dry offset plate can be etched down to 0.012 in. depth in 5 min. Magnesium plates can now be etched without any sidewall protection. In these research programs the sponsors are now trying to apply uniform etching methods to larger size plates and at present are working on the 17 in. by 22 in. size. Suitable equipment, especially designed for etching magnesium plates, is being developed.

Negatives for dry offset printing plates must have proper allowance of depth between the dots to etch down to 0.012 in. This requirement in negatives is about the same as that for any good letterpress plate.

The standards for dry offset printing, as they now stand, can change. The interpretation of tone values vary from shop to shop and even from craftsman to craftsman. It is hoped that a research program will result in determination of such standards. Until all the bugs are worked out, keep yourself open minded about this method of printing.

Dow Chemical Co. has published information on how to retard the corrosion of high etch magnesium plates while in storage. Moore Business Forms has experienced no trouble with corrosion of these plates when placed in storage. This is explained by the fact that they are placed in an alkaline solution while being processed. It is suggested that the plates be placed in a solution of common lye before going into storage.

In dry offset platemaking, when working with a plate 0.025 in. thick it is best to etch down to about 0.012 in. depth or not more than half-way. The factors involved in the depth of etch include the condition of the press, blanket, cylinder, gears, etc.

Basing his opinion on commercial use, Mr. Sears said coarse screen halftones (from 60 to 65 line) will be highly successful. He also revealed that a press manufacturer is designing a specially built press for dry offset printing.

Distribution Changes

American Type Founders has announced that stocks of the ATF Portland, Ore., branch are now consolidated in its Seattle, Wash., branch. Supplies from this stock are available on an over-night basis, and inquiries should be addressed to that office at 71 Columbia St., Seattle 4. Milwaukee branch stocks are consolidated in the Chicago branch, located at 518 W. Monroe St., Chicago 6. ATF customers in the Western and Northern Michigan territory will now be served by the Detroit branch with offices at 449 W. Congress St., Detroit 26.

RUGGED!

CLINE-WESTINGHOUSE
ELECTRICAL EQUIPMENT

For Newspaper Plants

Unit Press Drives . . . Controls . . . Reels . . . Automatic Tensions . . . Speed Pasters

Cline Mechanical Equipment

Paper Roll Handling . . . Mail Room & Press Conveyors . . . Stereotype Plate Droppers and Conveyors

For Commercial Printers

Drives for all types of presses.

Control Equipment for binding, electrotype, stereotype and composing machinery.

Electronic Controls for motor drives, color registering and matching, side margin and folder web controls.

Winders and Unwinders complete with variable voltage drives and tension control devices.

● Cline Electrical Equipment has an inbuilt ruggedness which means *it can take it.* That insures many extra years of dependable service.

Although Cline has been manufacturing electrical equipment for the printing industry for over 40 years, *many of the first Cline installations are still on the job.* Dozens of old Cline marble-panel controllers . . . extinct for more than a generation . . . continue to provide daily, trouble-free service.

A ruggedness that makes it unusually dependable; an efficiency that means economy of operation; plus an ability to handle sizeable overloads . . . these characteristics of Cline Electrical Equipment mean *you can count on Cline* for everything electrical used by the printing industry.

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San Francisco 8, Cal.

CLINE SYSTEM

EASTERN OFFICE
220 East 42nd St.
New York 17, N. Y.

Patents

For The GRAPHIC ARTS

Covering patents issued August 7, August 14, August 21 and August 28.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

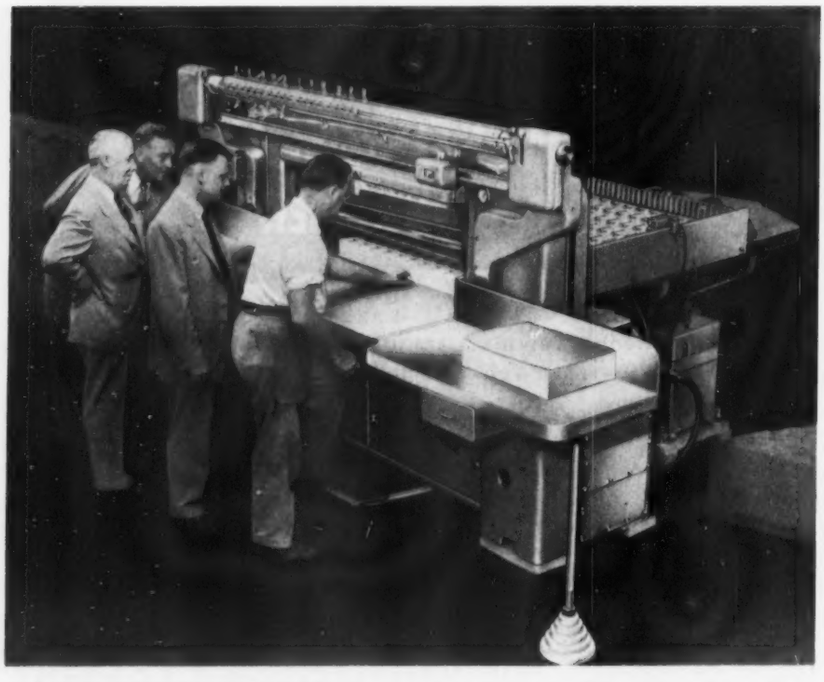
Chicago Tribune's Presses in Miniature—A scale model of the Chicago *Tribune's* block-long row of Goss Headliner Presses, which include 30 press units, five folders and five specially-designed four-color decks, was presented to the *Tribune* recently by the Goss Printing Press Co. John W. Park (second from right), Production Mgr. of the *Tribune*, and O. R. Wolf (second from left), Asst. Production Mgr., accepted the scale model from William Goss (right), Vice President, and C. S. Reilly (left), Vice President and Sales Mgr. of the Goss firm. The row of Headliner presses is the newest of the newspaper's four complete block-long lines of presses totaling 126 press units with 24 folders and 23 four-color decks.

Binding, Cutting, Perforation

2,562,938. FIVE-KNIFE FOUR-STAGE BOOK TRIMMER is used in trimming book units in which each unit comprises a plurality of printed sheets bound together to form two complete books when the unit is cut transversely between its ends. A single knife carrier is provided for the several knives and is mounted for reciprocable movement upon a machine base or frame having a plurality of cutting blocks secured thereon to coact with the knives in trimming the book units. To control the cutting stroke of the knife carrier, it is brought into engagement with the machine base upon contact of the knives against their respective cutting blocks. Knife edges and cutting blocks are thereby provided with a relatively long service life as the cutting stroke is always terminated immediately upon contact of the knife edges against the cutting block. Invented by Charles L. Moyer, deceased, by Clifford S. Bassett, executor, Chicago, Ill. Assigned to C. L. Moyer Co., Chicago, Ill. Application March 22, 1948. 14 Claims.

2,562,950. FIVE-KNIFE THREE-STAGE TRIMMING MACHINE includes a base, book supporting means on the base, and book engaging means to engage and progressively move books step by step to three cutting stages on the book supporting means. A knife carrier mounted for reciprocative movement toward and away from the base carries five knives. One knife is disposed at the first cutting stage to trim the front edge of a book unit. Two knives are disposed at the second stage to cut a first book from the book unit, and two knives are disposed at the third stage to cut a second book from the book unit. Invented by Carl A. Roessl and Robert P. Fendius, Chicago, Ill. Assigned to C. L. Moyer Co., Chicago, Ill. Application March 16, 1950. 19 Claims.

2,565,583. ROUGHENING DEVICE for use on book binding and covering machines comprises a disc journalled for rotation about a vertical axis, the upper face being provided with a plurality of cemented-carbide cutters to trim and roughen the backs of the signature groups or books. The cutters are arranged in a circle about and concentric with the axis of the disc, with the cutting tips equally spaced from the face of the disc when a uniform flat surface is desired on the backs of the signatures or books. Tips can be spaced to make transverse grooves, etc. Invented by Raymond E. Ackley, Evanston, and Arthur J. Fiedler, Chicago, Ill. Assigned to W. F. Hall Printing Co. Chicago, Ill. Application February 21, 1950. 18 Claims.



Installs Electronic Spacer Cutter—A model 52-T-76 Lawson Electronic Spacer Cutter was recently installed at the Bloomfield, N. J., plant of the Nevins-Church Press as part of the company's expansion program. Shown above is Cutting Room Foreman John Curry at the controls of the new machine. Others in the picture from left to right include W. J. Hourigan, Treasurer of E. P. Lawson Co., and E. S. Tine, Plant Mgr., and T. C. Nevins, jr., Vice President, both of the Nevins-Church firm.

Composing Room Equipment

2,563,147. SLUG RECEIVER is applicable to the "Mohr Lino-Saw" which is sold as an attachment for Linotype and Intertype machines. An automatically operating guide automatically moves into and out of guiding position in timed sequence with the operation of the slug jogger. The guide is effective to guide short slugs, long slugs and slugs of any intermediate length down to the terminal position at the lower edge of the assembly platform. The guide does not interfere with the slug jogger. The type casting operator is relieved of the duty of making any changes or adjustments in the guide mechanism when changing from long slugs to short slugs or vice versa. Invented by Paoli G. Woodliff, Houston, Tex. Assigned to Mohr Lino-Saw Co., Chicago, Ill. Application April 1, 1947. 5 Claims.

2,563,169. TYPE COMPOSITOR'S ANGLE GUIDE is intended to reduce the time and labor consumed in measuring and cutting angulated base blocks and rules. The angle guide may be applied directly to lay-out copy and set in conformity with a desired angle thereon without the necessity of scaling such angles. It may then be applied to a printer's saw to guide a margin of a piece of material to be cut at the angle to the saw. The guide includes a clamp

for holding work at a measured angle to the saw. Invented by William H. Hughes, Venice, Calif. Unassigned. Application April 5, 1948. 5 Claims.

2,564,418. SQUIRT GUARD FOR TYPE CASTING APPARATUS comprises a C-shaped plate adapted for attachment to type casting apparatus with the recess of the plate extending horizontally and opening forward. An open-bottomed hood has a flange pivotally connected to the lower margin of the shield so that it is swingable between a retracted position within the recess with its open bottom directed forward, and an operative position. In the latter position it is out of the recess and its open bottom is directed downward. A lost-motion spring-actuator linkage connects device to the pot of the type casting apparatus. With hood in operative position, guard completely protects linotype operator from metal that may spurt upward. Invented by Joel N. Bonkrud, Pine Lawn, Mo. Unassigned. Application July 9, 1948. 2 Claims.

2,565,934. HOLDER is adapted for use with a Linotype machine. The carrier is for holding a plurality of character-carrying elements for simultaneous treatment to provide a dark background for the individual identifying symbols. It is a hollow container having an open bottom and closed side ends and top. The container includes means for clamping a plurality of character-carrying elements therein in face-to-face relation, the parts of the elements to be colored being exposed to the open bottom of the container. A handle for carrying container is detachable from the top wall of same. Invented by Frederick F. Simmons, Merriam, Kan. Unassigned. Application February 23, 1949. 2 Claims.

Feeding, Folding, Delivery

2,562,999. SHEET FEEDER FOR COLLATOR. Mechanism provides for feeding loose sheet paper to printing or folding machines, book assemblers, addressing machines, etc. The top sheet of the stack is used for gauging purposes whereby the top sheet will always be in the same plane relative to a rotary upper sheet feeding means regardless of the decrease in the quantity or size of the stack. Top of stack is urged against an adjustably fixed stop or block during each cycle of operation with a substantial upward thrust obtained by springs acting on the stack tray or carrier. The tray is depressed relative to the stop during feeding action of a rotary feed mixer. A positively acting means effecting uniform depression acts on compensating cams in the tray, whereby as stack is lessened in height its top will always be in the same plane relative to sheet wiper feeding means at the time feeding action occurs. Invented by Paul L. Barensfield, Parma, and Michael A. Nader, North Olmsted, O. Unassigned. Application February 25, 1949. 4 Claims.

2,563,450. SHEET SEPARATING MECHANISM picks up and feeds sheets of paper and cardboard to a printing machine. It comprises a movable carrier having a foot or pad and a sheet taking device moves in the carrier relative to the foot. The carrier may be moved towards the pile of sheets until the pad and taking device are in operative disposition with respect to the top sheet after which in automatic sequence the device is operated to move relative to the foot to bend the top sheet about the foot and then the pad and device are moved away from the pile to take or separate the top sheet from it. The arrangement is such that the carrier moves towards the sheets until the foot and taking device are operative to engage and take the sheet, thus accomodating any irregularities of the surface of the sheet, such as buckles or waves. Then the bending and separating operation takes place automatically. Invented by Alfred P. Battey, London, Eng. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application May 8, 1946; in Great Britain May 10, 1945. 10 Claims.

2,563,492. MACHINE FOR SEPARATING AND FEEDING COUNTED BATCHES OF ARTICLES is claimed by which counting of the products is effected by separating a continuous stream of successive products into separated batches each consisting of a predetermined number of products. This is accomplished by diverting the products at count intervals, as they emerge from the machine, to different traveling supports, and while products to make up one batch are being directed to one support, the support to which the products were previously diverted is speeded up to separate, in the sense of movement of the batches, the batch on that support, from the batch being completed at this time. The batches are taken in turn by conveyers which are traveling continuously at accelerated speed so that the separation be-

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KORKER* — Under Blanket for older type presses or where an unfavorable mechanical condition exists. Gauges .058" to .070".
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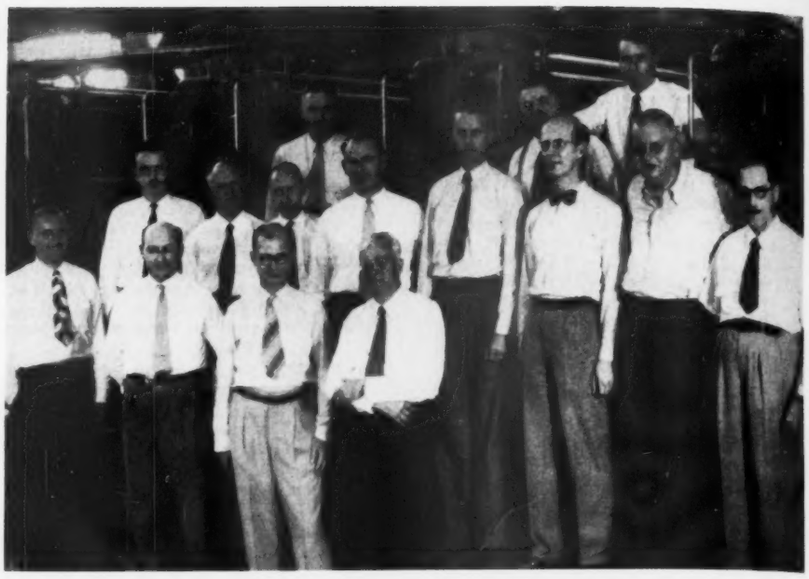
tween the batches is maintained and the batches pass away in a stream to a collection point. Invented by George Turrall and Charles H. Skinner, London, Eng. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application October 6, 1948; in Great Britain March 3, 1945. 8 Claims.

2,563,498. SHEET DEFLECTING MECHANISM for use with printing presses is of the type described in patent No. 2,563,492 in this report. The deflector includes two deflecting rollers which are mounted in offset relation to each other and which are operated in opposite directions. Mechanism is provided to effect relative movement between the directing means on the one hand and the two rollers on the other hand to present the periphery of one roller to a group of articles approaching the deflector device and then to preesnt the periphery of the other roller to the next group of approaching articles. Invented by Charles H. Skinner, London, Eng. Assigned to R. Hoe & Co., Inc., New York, N. Y Application January 7, 1948; in Great Britain September 19, 1946 13 Claims.

2,564,417. SHEET FEEDING APPARATUS is adapted for feeding signatures and depositing them in open condition on a saddle conveyor. Means are included for relieving the weight of the supply stack upon the foremost signature during its withdrawal from the stack. Such means comprises a pair of spaced parallel shafts extending across the supply above same and spaced forwardly from the front face, parallel levers on the pair of shafts which extend downwardly, and a link pivotally connecting lower ends of levers. A transversely extending bar mounted on the link has elongated supply engaging pushers which are inclined forwardly from the vertical. A cam rocks one shaft and lever in one direction prior to withdrawal of the foremost sheet whereby pushers are moved rearwardly and the front part of supply is rearwardly displaced. The cam controls a spring which urges other shaft and lever in the opposite direction simultaneously with the withdrawal of the foremost sheet whereby the pushers are rapidly moved forwardly away from the rearwardly displaced front portion of stack. Invented by Leonard Baker, Hillsdale, N. J. and Walter E. Schneider, Pearl River, N. Y. Assigned to Dexter Folder Co., Pearl River, N. Y. Application September 26, 1945. 4 Claims.



Swiss Visit Miehle Plant—Shown above is a group of Swiss printers who recently visited the plant of the Miehle Printing Press & Mfg. Co., as one of their first stops on a tour of American printing institutions. Acting as hosts to the 12 printers during their Miehle tour were Carlton Mellick, Charles Cowell and Ted Niggli. The tour, financed entirely by the Swiss printing concerns involved, will include Detroit, Pittsburgh, Philadelphia, Washington and New York as well as Chicago. The group includes top executive and operating personnel for 12 of the principal Swiss printing companies.

Overcomes Delivery Problem—Shown here is a Consolidated 18 in. by 22 in. Process Darkroom Camera being delivered to a newspaper plant in a midwestern city. Because of the bed length of the particular model, Consolidated Photo Engravers and Lithographers Equipment Co., makers of the camera, had to resort to this method of delivery when it was found it could not be taken up by the building's freight elevator.

2,564,591. SHEET FEED INTERRUPTER MEANS FOR PRINTING PRESSES. The improved control of the feeding means of sheet-fed, lithographic, offset presses by delivering the topmost sheet from a stack of sheets to be printed to the printing couple of that press is the object of this invention. Means is provided for automatically discontinuing operation of the feeding means in the absence of a sheet between the constituent rolls of the printing couple and for controlling operation of the feeding independently of the presence or absence of a sheet at the printing couple. The printing couple is comprised of a pair of cylinders. The feeding means include pneumatic sheet-elevating mechanism. The pump is driven by electricity. A magnetic holding circuit retains switch closed. Invented by Roy F. Aberle, Portland, Me. Assigned to Southworth Machine Co., Portland, Me. Original application September 20, 1946, divided, and this application April 9, 1948; in Canada September 18, 1947. 2 Claims.

2,565,054. AUTOMATIC SHEET REGISTERING DEVICE FOR LITHOGRAPHIC AND PRINTING PRESSES provides a registration support of greater length and width than each sheet to be registered, just back of and near front sheet guides. It eliminates feeding rollers or tapes to effect longitudinal registration. Instead supplemental pushers are used to abut the trailing edge of a sheet when on the registration support to urge it forwardly to abut front guides preferably at the same time the side guide is acting, to provide a simultaneous materal and longitudinal registration of each sheet in the support. To prevent buckling, the pushers are made with a flat lower end underlying the trailing edge

of the sheet to slide underneath sheet and an arcuate body extending upwardly and rearwardly to push sheet against front guides. Invented by Howard J. Watrous, Cranston, R. I. Unassigned. Application October 19, 1946. 8 Claims.

2,565,459. AUTOMATIC RECIPROCATING CROSSWISE FEEDER FOR OSCILLATING PLATEN PRESSES. This press provides cross feeding means for taking a sheet of paper at one side and slightly forwardly of a press, supplying such sheet to a forwardly lowered platen, entering same thereon, removing such printed sheet and depositing it to the left and slightly forwardly of the press. The press has a relatively stationary printing bed and an oscillating platen movable toward and away from the bed, and an eccentric throw-off mechanism. The combination includes a platform for supporting a stack of sheets, suction fingers for engaging and transferring sheets, a source of vacuum connected with the fingers, a carriage for mounting the fingers, and linkage for rendering carriage inoperative when the platen is inoperative. Invented by Harry B. Willett, Indianapolis, Ind. Unassigned. Application November 15, 1945. 4 Claims.

2,566,175. SHEET FEEDING APPARATUS separates sheets from a stack of horizontally disposed sheets and moves the separated sheets across the stack in quick succession. It comprises a plurality of sets of gripping members positioned above the stack of sheets, a rotary drive shaft, and a group of sets of cams fixedly mounted on the shaft. One set of cams is positioned at an angle of 180° relative to another set. A second set of cams is fixedly mounted on the shaft. Each set is given a vertical oscillatory motion as they are moving across the stack. Invented by Yngve A. F. Danielsson, Goteborg, Sweden. Unassigned. Application November 29, 1945; in Sweden May 31, 1945. 2 Claims.

Plate Making

2,564,414. THE DEVELOPER is used in the lithographic process and is particularly adapted for processing bimetallic and deep etch plates. It comprises a concentrated aqueous solution of calcium chloride and zinc chloride in a weight ratio between 3 to 2 and 1 to 1, and from 1 to 3 per cent by weight of hydroxyacetic acid. Invented by Paul J. Whyzmuzis, Jamaica, and William O. Kaupp, Ozone Park, N. Y. Assigned to Interchemical Corp., New York, N. Y. Application May 14, 1949. 3 Claims.

2,564,659. RE-ETCHING ELECTROTYPES. A process is provided by which the printing characteristics or tone quality of electrotypes may be corrected as desired so that the electrotypes are more suitable for printing as part of a four color set to be printed at high speed on rotary web presses having a common impression cylinder. Shadow dots are opened up in color printing plate so that the ink to be printed will trap better. Correction of duplicate halftone letter press plates comprises lightly rolling up surface of plate with a mordant resistant ink, filling the recesses of the plate with a powder inert with respect to the mordant, heating the plate and etching it with a mordant which generates no gas during etching. Invented by John Lomax, Kew Gardens, N. Y. Assigned to Electrographic Corp., New York, N. Y. Application November 6, 1948. 2 Claims.

2,564,934. PHOTOENGRAVING SCREEN HOLDER, for making halftones, is adapted to be positioned in front of a film holder and to hold a screen through which a film will be exposed. A compensating plate holder is also adapted to be so positioned. This screen and compensating plate are automatically interchanged by simply turning a crank. A pair of vertically extending looped chains are mounted in parallel arrangement to each other and to the holders. The arrangement is such that when one holder is moved one way the other is moved the other way. The chains are driven in unison to move the screen holder from the active to an inactive position while at the same time the plate holder is moved from an inactive to the active position. Invented by Max H. Sussin, Ill. Assigned to Benjamin Sugarman, Chicago, Ill. Application September 30, 1946. 11 Claims.

2,565,218. ADJUSTABLE SCREEN FRAME FOR USE IN SILK SCREEN PRINTING is made up of a fixed aluminum outer frame member and inner frame members which are adjustable toward the fixed frame. The silk screen is held onto the frame by being pressed into a groove and secured by S-shaped clips. The device allows for adjustment of the screen to compensate for local silk distortion. Invented by James E. Freeborn, Broxbourne, Eng.

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Unassigned. Application January 28, 1948; in Great Britain, January 13, 1948. 12 Claims.

2,566,142. ETCHING MACHINE. IN certain respects the invention is an improvement over patent No. 1,825,127. Means are provided for subjecting the surface of a photo-engraving plate to be etched to a spray of the etching mordant. When the etching is completed, the mordant spray is interrupted and the plate is subjected to a strong blast of air which removes the excess mordant and returns it to the reservoir. Plate is then flushed with water. Invented by Frank T. Powers, Sr., deceased, by Frank T. Powers, jr., Locust Valley, and John M. Powers, Glen Cove, N. Y., executors. Assigned to Powers Photo Engraving Co., Glen Cove, N. Y. Application September 30, 1948. 1 Claim.

Printing Presses and Equipment

2,564,590. INKING MECHANISM FOR ROTARY PRINTING PRESSES provides better access to the inner portions of a press. In a lithographic press, the cylinder is adapted to hold a lithographic plate, with a plurality of ink form rolls adapted to cooperate with the cylinder. The press also includes an ink fountain, a plurality of distributor rolls normally running in contact with the respective form rolls, a frame on which a plurality of distributor rolls are mounted upon the axis of another of the distributor rolls, stationary frame means on which the ink fountain, the other distributor roll and ink form rolls are mounted. Means is provided for carrying ink from the fountain to the other distributor roll and between the several distributor rolls. Invented by Roy F. Aberle, Portland, Me. Assigned to Southworth Machine Co., Portland, Me. Original application September 20, 1946, divided, and this application April 9, 1948; in Canada September 18, 1947. 3 Claims.

2,565,570. RADIANT HEAT DRIER is for drying ink applied to a moving web on a high speed printing press. Open glow infra red heating units are utilized in the form of glow bars. The heating bar is utilized in connection with a novel form of reflector which serves to concentrate the radiant heat along a line extending transversely of the moving web. Invented by William Messinger, Philadelphia, Pa. Unassigned. Application June 11, 1948. 2 Claims.

Where the recipient of *Printing Equipment Engineer* is no longer connected with a printing plant, we'll appreciate it very much if his successor's name and title is sent to us. In this way, the new executive can be assured of receiving his copy of this magazine regularly at his place of employment.

BOOKS

Estimating System

A NEW estimating system for printers and typographers has been originated by Fred W. Hoch. The system consists of three parts which include the book entitled *Standard Production and Dollar-Hour Values for Printers*, a circular slide rule called the Dollar-Hour Calculator, and a Quick Count Copy Character Tabulator.

The system is based on a new unit of production known as Dollar-Hours which represents both units of dollars and cents at one dollar an hour, and hours and decimal hours of production. For example, .23 Dollar-Hours would represent 23 cents at one dollar an hour for the cost of the unit of operation (whether it is composition, presswork, etc.) as well as 23/100ths of an hr. of time for producing the unit.

In the book, the Dollar-Hour units shown for each operation have opposite them a blank column space to provide for pencil insertion of the plant's cost value of each operation. These figures are based upon the plant's individual hour cost rate for each cost center. For those plants that do not establish their own de-

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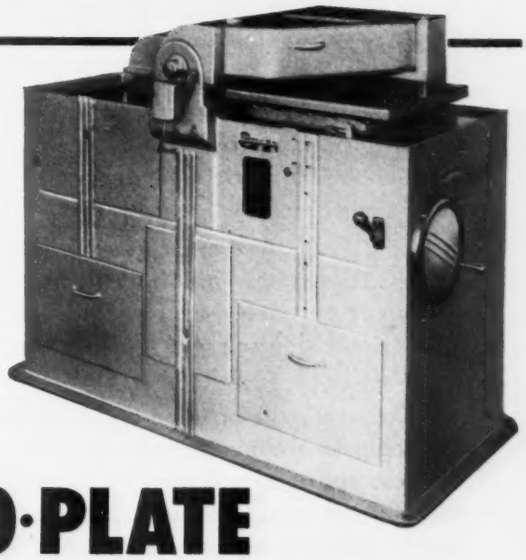

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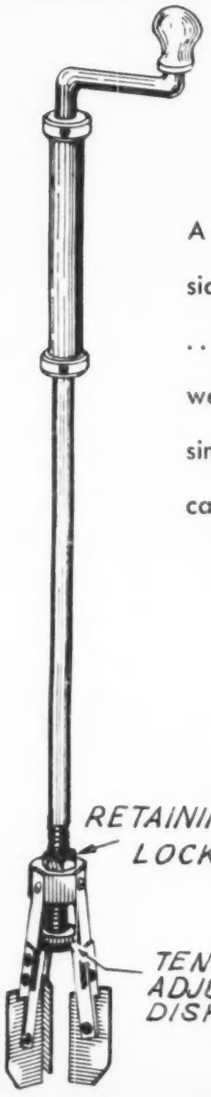

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partmental cost rates, the book contains Economic Hour Costs for guidance.

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The tables in the book contain production figures for composition makeup, inposition and lockup, makeready and running two color automatic presses, two color and five color rotary presses, cutting operations, trimming books for three knife and continuous trimmers, interleaving, collating sheets by machine and other minor adjustments.

The Dollar-Hour Calculator, with one setting of the total copy characters aligned to an alphabet length of chosen type, provides the number of running picas of type, ems of type of any size contained in the running picas, lines of type of any pica measure, time required to set the type by machine, time to set the type by hand, and cost of setting the type by machine at any hour cost rates from $1 an hr. up.

Individual settings of the Calculator provide the makeup time and cost of the machine composition. Also the depth in picas of the column measure of all type sizes, number of characters in any alphabet length of type, and the alphabet length of any number of characters per pica. Other scales are used to find comparable ream weights of any sheet size of any kind of paper stock, as well as for multiplication and division.

The Quick Count Copy Character Tabulator is used for obtaining the total amount of characters in typewritten copy. Based on single spaced pica typewritten copy, provisions are also made for double spaced and elite typewritten copy.

Standard Production and Dollar-Hour Values for Printers—by Fred. W. Hoch. Book consists of 38 pages measuring 11 in. by $8\frac{1}{2}$ in.; printed on heavy offset paper stock; case bound in cloth. May be ordered from Fred W. Hoch Associates, Inc., 461 Eighth Ave., New York 1, N. Y. Price of complete three-part estimating system described above, $25.00 net.

Typography and Design

THE fifth book in the Apprentice Training Series released for public sale by the Government Printing Office is the 187 page text entitled *Typography and Design*. It is recommended as a reference book for printers and printing buyers, for it deals with many of the services which the average printing plant procures from other sources. It will also serve as an advanced textbook for schools and colleges offering courses in printing.

A portion of *Typography and Design* is devoted to the backgrounds and uses of the different type faces used by printers. Other parts deal with illustrations and methods of reproducing illustrated copy. Design principles and their application to different kinds of printed work make up still another part of the book. The final chapters tell how to plan the production of printing, such as choosing the printing process, copyfitting, and planning the composition.

The text is organized like the preceding volumes, into teaching units, complete with practice problems and projects. An example of a few of the subjects covered in the 24 chapters include the legibility and readability of printing types, halftone copy, suitable copy for line cuts and color printing, and selection of paper and binding.

Typography and Design—Issued by John J. Deviny, Public Printer of the United States. Book consists of 187 pages; size, 6 in. by $9\frac{1}{4}$ in.; gray linen cover with blue stamping. May be ordered from Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. Price, $1.50 per copy.

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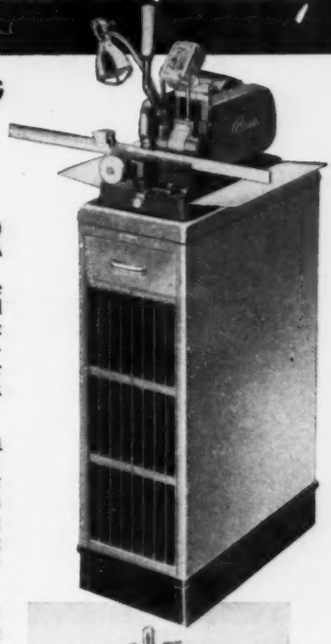

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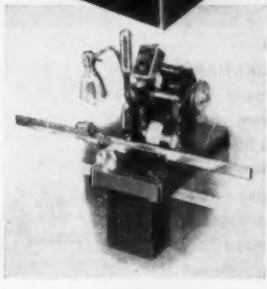

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BAND SAWS

EXECUTIVE Cs

After nearly a half century of service in the newspaper industry, Joseph J. Mahoney has retired as Mechanical Supt. of the Holyoke (Mass.) *Transcript-Telegram*. Mahoney has been associated with the Holyoke newspaper since 1920, as machinist, composing room foreman and for the past 20 years as Mechanical Supt. He started his career with the Providence (R.I.) *Journal* as apprentice machinist in 1907. He is a charter member and past president of the New England Newspaper Composing Room Executive Assoc. and also a charter member of the New England Mechanical Conference. He served on the Board of Directors of the latter organization for six years. His son, Thomas P. Mahoney, was recently elected Third Vice President of the Intl. Assoc. of Printing House Craftsmen and is also Plant Supt. of the Regensteiner Corporation, Chicago. Mr. Mahoney resides at Smith's Ferry, Mass., a suburb of Holyoke.

From apprentice boy to Vice President in Charge of Operations tells the story briefly of the rise of Edward H. Christensen with the Central Typesetting and Electrotyping Co., Chicago. Announcement of Christensen's election to the vice presidency was made by President Arthur N. Knol following the annual meeting of Board of Central's Directors on June 25. It took Christensen 32 years to prove his worth but nevertheless his associates, friends and well wishers have congratulated him. Christensen started in the composing room as apprentice. He has worked progressively as compositor, Magazine Dept. Foreman, and for the past seven years has been Production Mgr. In February, Christensen was placed in charge of all manufacturing operations.

A. E. Giegengack has been appointed Manager of the New Haven Electrotype Div., Electrographic Corporation, according to an announcement by Joseph Reilly, Chairman of the Board. Giegengack succeeds Wilbert A. Rike who has resigned. Mr. Giegengack will continue as Vice President and Eastern Sales Mgr. of the Electrographic Corporation in addition to discharging his new duties.

To better serve communications men, everywhere

TWO NEW MANUFACTURING PLANTS

FOR PERFECTION PRODUCTS

BUSTLETON, PA. Single story steel and masonry construction with floor area of approximately 200,000 square feet. Located on a 30-acre tract on the outskirts of Philadelphia. Modern in appearance, design, and equipment.

These two new homes for **PERFECTION** *products add up to*

FASTER SERVICE

WORLD'S LEADING BRAND — PERFECTION — COMMUNICATION PAPERS

IMPROVED QUALITY

for buyers of communication papers all over the world.

INDIANAPOLIS, IND. Single story steel frame building with 40,000 square feet of floor space. On 9 acres of ground on the outskirts of Indianapolis. Equipped to convert the full line of PERFECTION Paper Roll products and specialties.

Perfection IS YOUR PROTECTION

CHECK ON YOUR SUPPLY OF BOOTH'S ZINK CUT CEMENT

We suggest that the hundreds of users of BOOTH'S ZINK CUT CEMENT check on their supply right now. If you are low, get your order in now for this outstanding cut cement for mounting cuts and solidifying type elements for standing ads. If you have never used this famous cut cement, try it. You'll find it mounts cuts quicker and holds them tighter . . . in use all over the country by leading plants.

Prices: 75c per tube, $6.00 per dozen in the United States.

E. A. BOOTH RUBBER CO.
2855 Scarboro Road
Cleveland Heights, Ohio

After more than 40 years service to the Graphic Arts industry, William Guy Martin has retired as Pacific Vice President of the Harris-Seybold Co. His retirement was announced by Harry A. Porter, Vice President in Charge of Sales for Harris-Seybold. Mr. Martin served as executive secretary or managing director of Ben Franklin clubs and other Typothetae locals in Seattle, Cleveland, Detroit, Cincinnati and St. Louis. He joined Harris-Seybold in 1926 as a sales representative based at the company's Chicago office. He became a vice president of the company in 1935. In 1946 he went to San Francisco as Vice President and Pacific District Mgr. It was announced that Mr. Martin will continue to make his home in San Carlos, Calif., where he will be available to Harris-Seybold as a special consultant.

Mrs. Bernice Dalton Brackett, wife of James R. Brackett, General Manager of Printing Industry of America, died September 18 at Georgetown University Hospital, Washington, D. C., after a long illness. A native of Chicago, she spent her early years in Woonsocket, S. D., and was a graduate of Clarke College, Dubuque, Ia. During the late 1920s she held various posts on the editorial staff of the Sioux Falls (S.D.) *Argus Leader*. It was there she met her husband, also a staff member. They were married in 1932.

Adrian L. Vander Linde has assumed part ownership and management of the Kalamazoo Printing Machinery Co., Inc. He will function as Vice President and Business Mgr. During the past several years he has been manager of the Technical Dept., Hammond Machinery Builders, Inc. Vander Linde is a veteran of World War II and has attended Kalamazoo College, Academy of Aeronautics of New York City and Yale University. Grover C. Brussee, who formed the company in 1943, is president of the firm.

C. A. Howe, President, Hills-McCanna Co., recently announced the promotion of two members of the organization. Fred R. Grassle, Secretary of the firm has been appointed Assistant to the President. He retains his duties as Secretary. R. T. Kidde has been appointed General Sales Mgr. of all divisions.

Robert N. Ward has been appointed General Manager of American Type Founders' Webendorfer Div. at Mount Vernon, N. Y., it was announced by E. G. Williams, President. American Type Founders is a subsidiary of Daystrom, Incorporated. A mechanical engineer, Mr. Ward has been works manager of the Egry Register Co., Dayton, O., and before that has held executive engineering, manufacturing and sales positions with the Frigidaire Div. of General Motors Corp., New York and Dayton and with the Kelvinator Corporation. He attended Columbia University, City College of New York and the University of Dayton. In his new assignment, Mr. Ward will have complete charge of the engineering, manufacturing and sales activities of the Webendorfer Press Div., reporting to Robert N. Nelson, Vice President of ATF.

Athol D. Bloom, 63, Head Machinist at the Pittsburgh *Press* for 16 years, passed away at his home in Pittsburgh on August 23. Mr. Bloom became associated with the Pittsburgh *Gazette-Times* in 1910 and two years later joined the *Leader* in that city. In 1923, he began work at the *Press* and in 1934 became Head Machinist. Last year, Mr. Bloom received his 40 year pin from Typographical Union No. 7. He was recognized as a national authority on typesetting machines. He is survived by his widow, Mrs. Daisy I. Bloom.

EXCELLENT REPRODUCTIONS...

To assure line or halftone reproductions that look alive ... that are faithful in every sharp or subtle detail ... leading stereotypers use BURGESS MATS exclusively.

The *uniform shrinkage* of Burgess Mats ... their *greater plasticity* ... their *smoother faces*—these advantages pave the way for finer reproduction. And these advantages are guaranteed by Burgess' unique set-up for precise laboratory testing during each step of volume mat-making.

BURGESS CELLULOSE COMPANY

Manufacturers and Distributors
of Burgess Chrome and Tone-Tex Mats
FREEPORT, ILLINOIS

BURGESS Chrome MATS

W. Joseph Taylor has been appointed to succeed Clarence I. Gray as Manager of the Washington, D. C., branch of American Type Founders. Gray, who has retired, has been associated with ATF for more than 33 years. Taylor, already Manager of ATF's Baltimore branch, will divide his time between the two branch offices in Washington and Baltimore. W. A. Wells, formerly sales representative for ATF in Columbus, O., has been transferred to the Washington, D. C., branch in the same capacity.

John G. Gerken, former president of the Rumford Printing Co., Concord, N. H., has established a printing management consultant service, available for members of the Printing Industries Assoc., Inc., of Los Angeles, it was announced by G. Henry Henneberg, Manager of the local trade group. Gerken will serve many plants on a two or three day basis to iron out existing problems, according to Henneberg.

Fred W. Seybold, Chief Engineer of E. P. Lawson Co., was recently appointed Assistant Vice President, according to an announcement by David W. Schulkind, Lawson President. Seybold joined the Lawson firm in 1945 after serving 11 years as chief engineer of American Type Founders, Inc. Prior to this, he was chief engineer for nine years for the Seybold Machine Co. He is a graduate of the Engineering School of Ohio State University.

Harry E. Stoddard, Manager of the Des Moines, Ia., branch of American Type Founders, has assumed managerial responsibility for ATF's Minneapolis branch, 117 Washington Ave., North. He replaces Harry Detlef who has resigned as manager in Minneapolis. Stoddard will continue as manager of the Des Moines branch, dividing his time between the two offices. He has been associated with ATF since 1944, first as a salesman in the New York branch and has served in a managerial capacity in Des Moines for the past two years. Prior to joining ATF, Stoddard worked for the Lanston Monotype Machine Co.

EVIDENCE!
RE-ORDERS!
convincing proof of spectacular acceptance!
Why have so many here and abroad RE-ORDERED E. B. CO Presses? Because they proved to themselves with on-the-job performance in their own plants that E. B. CO GAVE THEM THE MOST FOR THEIR MONEY!
WRITE FOR THE BROCHURE describing sensational improvements in offset press design plus the impressive list of firms with from 2 to 9 E. B. CO presses operating profitably in their plants. E. B. CO REGISTERS WITH LITHOGRAPHERS EVERYWHERE.
EB CO
PRINTING MACHINERY DIVISION • ELECTRIC BOAT COMPANY
445 PARK AVENUE, NEW YORK 22, NEW YORK
120 SO. LA SALLE STREET, CHICAGO 3, ILL.
WM. M. KEMP CO., 440 MARKET STREET, SAN FRANCISCO 11, CAL.

Conference Dates

(With Organization Names and Principal Officers)

American Photoengravers Association – 1951 Convention, Netherland Plaza Hotel, Cincinnati, O., October 8, 9 and 10. W. K. James, President; Frank J. Schreiber, Executive Secretary, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—1952 Conference, Fairmont Hotel, San Francisco, June 9, 10 and 11. Chairman of the Committee, L. J. Griner, Production Manager, Detroit *News;* Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

Fifth District Craftsmen's Conference—1952 Conference, Hotel Statler, Detroit, tentative dates June 20 and 21. President, Robert Knox, Michigan Typesetting Co., 457 W. Fort St., Detroit, Mich.; Secretary-Treasurer, Robert Wolf, Richardson-Taylor-Globe Co., 4501 Mitchell Ave., Cincinnati 32, O.

Gravure Technical Association—1952 Conference, Biltmore Hotel, New York, N. Y., January 1952, exact dates to be announced later. President, Len S. Pinover, Intaglio Service Corp., 305 East 46th St., New York, N. Y.; Secretary-Treasurer, J. E. Hazel, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

Great Lakes Newspaper Mechanical Conference—1952 Conference, Hotel Statler, Detroit, January 20, 21 and 22. President, Joseph E. McMullen, Asst. Production Manager, Milwaukee (Wis.) *Journal;* Secretary, Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press;* Chairman, Mfrs. and Suppliers Committee, Edgar Flint, Howard Flint Ink Co., Clark Ave. and M.C.R.R., Detroit 9, Mich.

Illinois Newspaper Mechanical Conference — 1952 Conference to be held in Alton, Ill., dates to be announced later. President, James B. Mawdsley, Composing Room Supt., Alton (Ill.) *Evening Telegraph;* Secretary-Treasurer, Wilbur L. Augspurger, Peoria (Ill.) Newspapers, Inc.

Intl. Assoc. Electrotypers & Stereotypers —1951 Convention, Kenmore Hotel, Boston, Mass., October 23, 24 and 25. A. P. Schloegel, Executive Secretary, 701 Leader Bldg., Cleveland 14, O.

International Association of Printing House Craftsmen—1952 Convention, Jefferson Hotel, St. Louis, August 10, 11, 12 and 13. President, J. Homer Winkler, Battelle Memorial Institute, 505 King Ave., Columbus 1, O.; Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Graphic Arts Education Association—President, George J. Bilsey, East High School, Cleveland, O.; Educational Director, Fred J. Hartman, 719 Fifteenth St., N. W., Washington 5, D. C.

International Typographic Composition Association—1952 Convention, Hotel Statler, St. Louis, Mo., October 9, 10 and 11. President, John R. Connell, Connell Typesetting Co., 302 E. Eighth St., Kansas City 6, Mo.; Frank M. Sherman, Executive Director, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference — 1952 Conference, Blackhawk Hotel, Davenport, Ia., May 17, 18 and 19. President, Ross DeVine, Superintendent, Davenport (Ia.) *Times;* Secretary-Treasurer, Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald.*

Kansas Newspaper Mechanical Conference — President, Glenn Cummins, Wichita (Kan.) *Eagle;* Secretary-Treasurer, Larry Miller, 701 Jackson St., Topeka, Kan.

Lithographers National Association — Executive Director, W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

Mid-Atlantic Mechanical Conference — 1952 Conference, Bellevue-Stratford Hotel, Philadelphia, March 20, 21 and 22. Jointly sponsored by the New Jersey Press Assoc. and the Pennsylvania Newspaper Publishers Assoc. Conference Director, Theodore A. Serrill, PNPA General Mgr., 209 Telegraph Bldg., Harrisburg, Pa.

Missouri Newspaper Mechanical Conference—1951 Conference, Bothwell Hotel, Sedalia, Mo., October 20 and 21. President, Earl H. Barker, Composing Room Foreman, St. Louis (Mo.) *Star-Times;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index.*

National Association of Litho Clubs — 1952 Convention will be held in Philadelphia, hotel and dates to be announced later. President, Anthony Capello, 265 Rocklyn Rd., Upper Darby, Pa.; Secretary, Joseph H. Winterburg, Phillips & Jacobs Co., 620 Race St., Philadelphia, Pa.

National Association of Photo-Lithographers—Executive Vice President, Walter E. Soderstrom, 317 West 45th St., New York 19, N. Y.

National Printing Equipment Association, Inc.—1951 annual meeting of the directors and members, Hotel Statler, Boston, October 26. President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O.; James E. Bennet, Secretary, 140 Nassau St, New York 7, N. Y.

New England Mechanical Conference — 1951 Conference, Statler Hotel, Boston, November 3 and 4. President, Howard E. Simons, Waterbury (Conn.) *American-Republican;* Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

Northwest Mechanical Conference — 1952 Conference, Hotel Duluth, Duluth, Minn., September 20, 21 and 22. President, John Breen, Mechanical Supt., Duluth (Minn.) *Herald* and *News-Tribune;* Secretary-Treasurer, Ralph Carson, Dunwoody Industrial Institute, Minneapolis, Minn.

Pacific Mechanical Conference—1952 Conference will be held in conjunction with ANPA Mechanical Conference at Fairmont Hotel, San Francisco, June 9, 10 and 11. President, Clyde Bowen, *Wall Street Journal,* San Francisco; Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles *Daily News.*

Printing Industry of America—1951 Convention, Hotel Statler, Boston, October 24, 25, 26 and 27. President, Robert H. Caffee, President, Wm. G. Johnston Co., Pittsburgh, Pa.; James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

ANOTHER MILESTONE

REGISTER-REDIBAK IS NOW 10 YEARS OLD

● The familiar blue of the acid-resist backing on Imperial Register-Redibak Zinc is a continuous reminder of Imperial progressiveness in zinc research and manufacture.

Register-Redibak was perfected in October 1941 and is the ORIGINAL plastic backing for photoengraving zinc. Register-Redibak insures precision register on every color job.

Imperial Zinc

A Product of

IMPERIAL TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS *Exclusively*

PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50

In Canada: **Latimer, Limited, Toronto 2B**

Research and Engineering Council of the *Graphic Arts Industry, Inc.* — President, Frank F. Pfeiffer, Reynolds & Reynolds Co., 800 Germantown Ave., Dayton, O.; Official Headquarters, Bernard Taymans, 719 Fifteenth St., N. W., Washington 5, D. C.

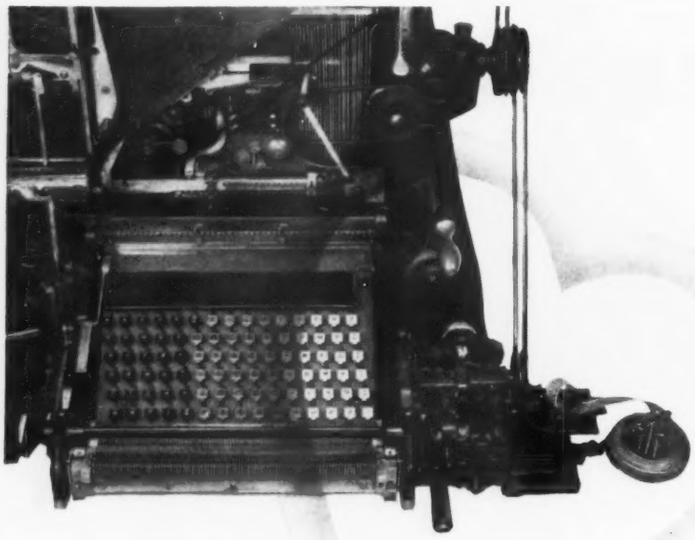
Screen Process Printing Association — 1951 Convention, Bellevue-Stratford Hotel, Philadelphia, October 21, 22, 23 and 24. President, John W. Key, Admiral Screen Print Corp., 627 W. Lake St., Chicago 6, Ill.

SNPA (Eastern Div.) Mechanical Conference—Chairman, L. H. Pickens, Mechanical Supt., Greenville (S.C.) *News-Piedmont;* Secretary, Tom Tanner, care SNPA, P. O. Box 1569, Chattanooga 1, Tenn.

SNPA (Western Div.) Mechanical Conference — 1952 Conference, Rice Hotel, Houston, Tex., February 24, 25, 26, 1952. Chairman, Ralph Moffett, Mechanical Supt., Dallas (Tex.) *Times-Herald.*

Technical Assoc. of the Graphic Arts — Next annual meeting to be held in Cleveland, dates and hotel to be announced later. President, Paul W. Dorst, 3373 Morrison Ave., Cincinnati 20, Ohio; Secretary-Treasurer, Paul J. Hartsuch, Intl. Printing Ink Div. of Interchemical Corp., 161 W. Harrison St., Chicago 5.

Many of our readers will respond to your ad in the Classified Section of *Printing Equipment Engineer*. Rates on Page 95.



The Heart of Automatic Typesetting

Actually, the operation of the Teletypesetter system is as simple as ABC:

A. The operator prepares a tape on the Teletypesetter perforator (not illustrated) which has a touch system keyboard similar to a standard typewriter.

B. The tape is inserted in the mechanical Operating unit, shown here, a switch is flipped—and the composing machine goes to work automatically.

C. The Teletypesetter-controlled linecasting machine turns out straight matter at an hourly rate of 375 or more lines—hour after hour.

For details as to how Teletypesetter can increase your type production by as much as 50% to 100%, write to:

TELETYPESETTER CORPORATION
1400 Wrightwood Avenue, Chicago 14, Illinois

TELETYPESETTER®

Film vs. Lead

(Continued from Page 51)

for use on the Fotosetter. Our present installation consists of Garamond Light, Garamond Bold and Baskerville, each with Italic; Futura Medium, Demibold, and Bold. In addition such faces as Century Schoolbook, Futura Book, Futura Medium and Bold Condensed, Copperplate Gothic, Bodoni, Bookman, Cairo, Scotch and Caslon No. 540 are either available or in process of manufacture for early completion. Intertype Corporation plans to produce all of the most prominently used faces now available on its slug equipment, plus any others as the need becomes apparent.

The darkroom technique which is needed to handle the product of the Fotosetter is familiar to most lithographers. It involves use of the usual equipment such as a temperature-controlled sink, contact printer, viewing table, etc. We have encountered no problems which could not be overcome by normal methods.

Corrections

One of the keystones in the whole Intertype system of phototypesetting is the development of a practical method of making proof-reading corrections. By the use of a line-correcting device, changes are relatively simple. A line-strip punch insures perfect alignment and parallelism when corrected lines are substituted. Accuracy is assured by the use of register holes punched into the film when the type is being set. An illuminated vacuum frame aids when the inserted strips are fastened with transparent tape.

Makeup of Fotosetter film involves the same stripping problems as any other film makeup. This process is expedited by the use of a precision trimming board and a vacuum makeup table, each taking advantage of the register holes on the Fotosetter film. Certain types of work can be done without any more effort than is required when made up in lead.

Excellent Quality

As far as the product of the Fotosetter is concerned, we are convinced that it is the best way we have yet seen to put type on film. Results we have achieved cannot be attained by any other method with which we are familiar. There is no question of the excellent quality which can be achieved by this process.

The End Product

After our corrected Fotosetter film is approved by the customer, our method of operation is entirely photomechanical. Without putting ink on paper at any stage of the proceedings, we furnish to the platemaker whatever type of film is specified—either positive or negative with emulsion on either side. Obviously, this product is ideally adapted to offset. This means film positives for making deep-

for the man with his eye on the gauge . . . PROFIT

From his protected position on this Seybold Automatic Spacer, the operator speeds through pile after pile of clean-cut paper, accurate to a fraction of an inch. He sets the stops once; thereafter every cut is automatically gauged, precisely trimmed . . . saving extra jogging and setting. That's what we mean by profit to the operator.

Cutter owners and their customers also profit from Seybold machines. Dependable production of accurate work at higher speed means satisfaction all down the line. Learn the story of Seybold Spacers. Write today.

HARRIS-SEYBOLD COMPANY CLEVELAND 5, OHIO

Fine graphic arts equipment for everybody's profit

GOING LIKE *wild-fire*

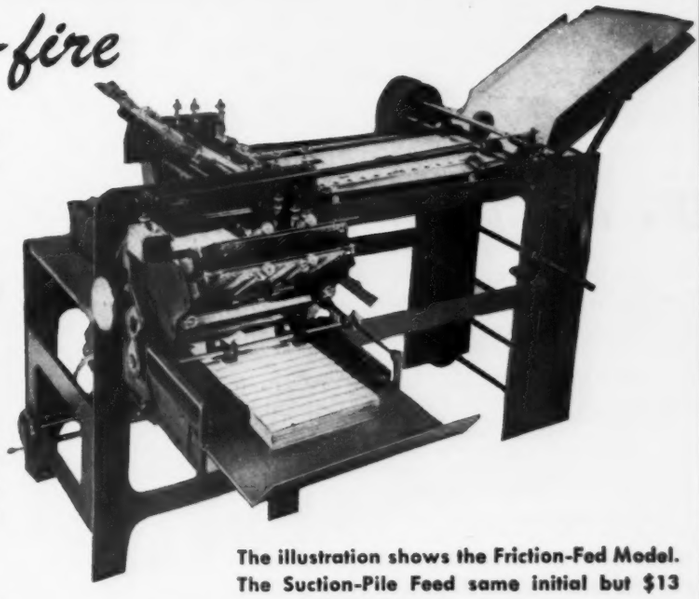
Fast as they can be shipped . . . over 600 in recent months . . . in April every business day five or more Printers and/or Bookbinders ordered the

New Junior 17x22 FIVE-FOLD Automatic BAUMFOLDER . . . Goldmine

Only $85 *initial and $40 per month for 30 months.*

It's a many-purpose, many-PROFIT 5-fold automatic folder . . . automatic rotary cutter (cuts out bleed trims and end trims WHILE folding) . . . automatic scorer . . . automatic PERFORATOR (accurate to a hair, end to end).

Five folding plates . . . 60 different styles of folds . . . 4 pages to 24 pages in one operation. Folds thinnest bible stock or onion skin. Perfection in accuracy . . . no less. Production that creates GOLDEN profit . . . has broken through the "ceiling" that paper can travel automatically . . . the ultimate in production (profit). It will pay for itself over and over long before you pay for it.



The illustration shows the Friction-Fed Model. The Suction-Pile Feed same initial but $13 per month additional.

RUSSELL ERNEST BAUM INC.

615 CHESTNUT STREET

PHILADELPHIA

etch plates, or if albumin plates are desired, we supply film negatives. In addition it is possible for us to give film negatives for letterpress photoengravings or film positives for rotogravure plates.

Installation Cost

Next, we feel sure that many of you will be interested in the question of installation cost. The machine itself is leased at a monthly fee by Intertype. It was necessary for us, however, to purchase the necessary Fotomats and magazines for use on the Fotosetter. In addition, any lithographer considering putting in this equipment would have the expense of at least one operator. In fact, it is our feeling that two-shift production is necessary for a Fotosetter to be operated on a justifiably economical basis. Other manpower needed would be a dark-room operator and a man to handle the film stripping. In addition, there is the expense of darkroom equipment, chemicals, film, etc.

Production Cost

We are frequently asked how the cost of setting type on the Fotosetter compares with the cost of setting type in lead. We estimate the production cost of our machine composition to be about the same as our hot metal machines. Our darkroom and stripping operations we cost at the same hourly rate as our regular makeup. However, the selling price of a particular job depends on the difficulty of makeup in film as compared to lead. Some jobs will cost about the same by either process, others will be prohibitive and should not be attempted on the Fotosetter. The probable necessity of authors' alterations must also be considered.

Acceptance Not Complete

Perhaps we should not have been surprised that the industry's acceptance of this machine in Detroit has not been nearly as complete as we expected. Apparently any new process—no matter how excellent it may be—meets certain resistance because of natural human inertia. In any event, we have encountered certain unexpected road blocks in our development of the use of Fotosetter composition. Even within our own organization, we have found considerable of an educational problem. In spite of the fact that the finished result is noticeably superior, many of our own people still prefer to do things as they have done them for the past fifteen, twenty, or twenty-five years. We are still faced with a certain amount of in-plant education.

Educational Problem

As far as our customers are concerned, this educational problem is even greater. We are obviously unable to control their activities and must rely entirely upon persuasion. Whether it be lithographer, advertising agency or manufacturer, the customer must handle his type orders somewhat differently on the Fotosetter than the manner to which he is at present accustomed. On some jobs this will involve co-operation between two or three persons besides our own organization. Such changes in buying habits are not easy, regardless of the quality of product offered. In addition we have not been helped by our competitors—who have no chance to receive a phototypesetting machine for a considerable period of time.

We have been amazed on several occasions to find lithographers objecting to Fotosetter composition because of the loss of the camera operation in their own plants. If one analyzes the total number of jobs which could possibly ultimately go to some method of phototypesetting, this entire loss would be relatively minor. Yet some short sighted members of our industry fail to see the advantages that will accrue to them by making their product better because they are worried about the loss of a mere fraction of their production operation.

Adaptability to Certain Work

We have indicated previously that we feel that phototypesetting is useful for only certain types of printing jobs. Obviously, the product of any such machine will be used to replace reproduction proofs of type which now go before a camera. In our analysis we have come to the conclusion that the following types

We don't like to crow, but . . . .

From all points of the compass, all over America, we hear nothing but the most enthusiastic praise for VULCAN'S NEW, IMPROVED OFFSET BLANKETS.

Newly developed coating compounds make these great blankets extremely uniform in thickness . . . give them a surface of greater density . . . perfect resiliency and ink receptivity.

For faithful reproduction of the copy with less effort, less waste of ink and paper, try the new improved VULCAN OFFSET BLANKETS. Order red or black. All sizes.

VULCAN RUBBER

PRODUCTS, INCORPORATED

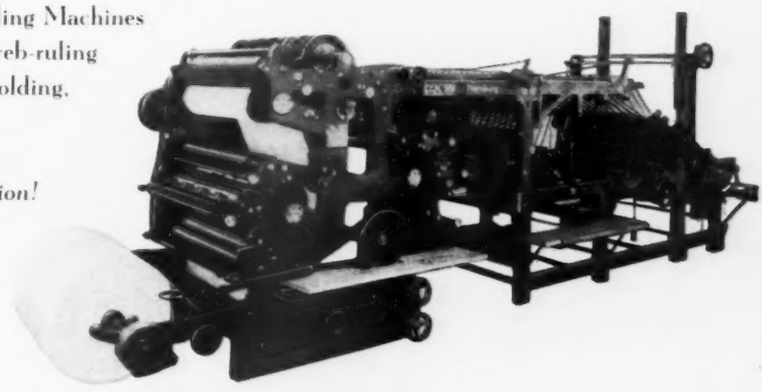
FIRST AVENUE AND 58th STREET, BROOKLYN 20, N. Y.

CHICAGO OFFICE: 333 NORTH MICHIGAN AVE., CHICAGO 1, ILL.

Pacific Coast Representative: THE CALIFORNIA INK CO., INC. • Canadian Representative: SEARS LIMITED, TORONTO

Amsterdam Continental says . . .
for every ruling job, if you want it fast and economical
there's a **way** *where there's a* **Will**

Will Rotary Ruling Machines
provide roll-fed, two-side web-ruling
and cross-ruling, cutting, folding,
counting, cover inserting
and, if desired, stitching
all in one operation!
Can accommodate
up to 8 perforating heads.
Unique *unified operation*
saves time, cuts costs,
speeds production.
Write for full data.



This ad set in Studio Egmont Family

Amsterdam Continental
Types and Graphic Equipment Inc.

268-276 Fourth Avenue, New York 10, N. Y.

HANDLE HEAVY NEWSPRINT ROLLS WITH LIGHTER PAYROLLS

Fig. 1 — Loading Position

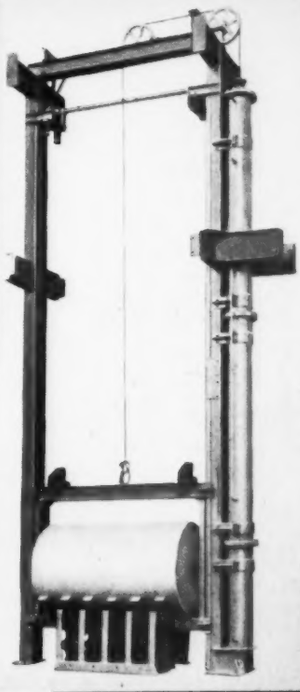


Fig. 2 — Discharge Position

You can cut handling costs on newsprint rolls at the flip of a latch with a G-W Pneumatic Lowering Machine. All you do is feed-in the rolls, any size, and they are on their way down to your presses or to storage, wherever you want them.

Any way you look at it, a G-W Tray Elevator or Pneumatic Lowering Machine saves you money. Besides saving labor, it eliminates damage to the rolls. Hinged loading fingers pick them up carefully, lower (or lift) them individually and discharge them gently, by gravity.

ALSO AVAILABLE ELECTRICALLY-OPERATED FOR RAISING AS WELL AS FOR LOWERING ROLLS

And if you want to eliminate "man-handling" altogether in your plant, investigate G-W's efficient line of economical Conveyors. You can get a low-cost set-up for mechanical handling of stereos, magazines, bundles, mail sacks, etc., throughout any part of your plant.

Write now and ask for a G-W Engineer to figure with you on a cost-saving solution to your elevating and conveying problems.

GIFFORD-WOOD CO.
Since 1814
Hudson, N. Y.

420 LEXINGTON AVE, NEW YORK 17, N. Y. — 565 W. WASHINGTON ST, CHICAGO 6, ILL. — RAILWAY EXCHANGE BUILDING, ST. LOUIS 1, MISSOURI

SPECIALISTS IN EQUIPMENT FOR MECHANICAL HANDLING OF MATERIALS

of composition are best adapted to phototypesetting.

The first of these is best summed up by the term "chunk" composition. Typography of this kind is used for labels, certain advertising broadsides, nomenclature for art work, and the like. Author's alterations on this type of work are not usually extensive and can easily be made when needed even if a small block of type must be reset. Labels are particularly suited to phototypesetting because they frequently require small type. On the Fotosetter, 4, 5, and 6 pt. are just as clear under a glass as the original letters themselves.

Books make up the second general class of work suitable to this process in our opinion. We refer particularly to one column material although two column books are also practical. In fact many kinds of one and two column composition can be economically produced by phototypesetting.

Blowups are also greatly improved by Fotosetter type. We refer to slide films, movie titles, display charts, and the like. Large charts particularly can be machine set in 24 to 36 pt. and blown up photographically to any desired size without any loss of detail, without any feathering of type edges and on many jobs at a substantial cost saving.

Rule Form Work

In recent weeks we have been working with Intertype Corporation in the production of rule forms on the Fotosetter. We are now able to supply such forms with both cross and down rules on the film in one operation. No double printing or other stripping is required except for box heads and the like. Under glass these rules are a great improvement over type forms from which reproduction proofs have been photographed or forms where the rules have been scratched in on the negatives.

Eventual Place in Industry

In conclusion, we would like to give you a few opinions about phototypesetting which we have formed—for what they may be worth. We do not feel that any method of setting type by the use of a camera will ever put our conventional method of composition with metal type out of business. We feel that regardless of the improved quality, the market for phototypesetting will always remain relatively limited. In fact, our present analysis of the total commercial printing which may some day go to this type of composition is not over 10 to 15%, unless some more efficient method of making complicated alterations is developed. Type on film—just as typewriting on paper—cannot be changed as easily as lead type. Author's alterations after film is stripped into page position are difficult and expensive, leading cannot be easily changed, jobs with complicated makeup —such as newspapers and the like—are not adapted to the process.

However, we do see a definitely expanding use of typography by photography. This will come as more machines are available and as the industry becomes more familiar with the process.

Perhaps it is a somewhat colored view on our part, but we feel that the development of this kind of typesetting will come most logically through typography plants rather than through installation of these machines in printing organizations except for extremely large firms. In most cases machines in supply organizations will be able to produce more efficiently the required phototypesetting for many printers, while a machine in most lithographic or other plants would not be an economical investment.

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COMPLETE
CAMERA PACKAGE
$1280.00
—nothing else to buy

Streamlined
GALLERY TYPE CAMERA
FOR GALLERY, DARK ROOM, OFFICE

Silk screen, offset, engraving, industrial plants, commercial photographers — you'll make substantial savings with this precision-built, completely modern ROBERTSON Camera. It will handle the major volume of your copying work quickly, accurately, and with profitable ease of operation. It has push button control; built in Incandescent Lamps; accurate color-corrected light source; automatic G-E Electric Timer, percentage scaling system, and many features not available on most equipment even at extra cost . . . This camera is complete. Plug it in and operate; nothing else to buy.

COMPLETE PACKAGE
$1280.00 FOB CHICAGO

Metallic, hammer finish, storage cabinet base; 14" Goerz Artar Lens; Automatic G-E Electric Timer; Mounted Incandescent Lamps; Stayflat Plate; Percentage Scaling System; ROBERTSON Universal F Value System; 21" x 25" Tilting Copyboard; Dimensions: 8 ft. long, 28 in. wide, 56 in. high.

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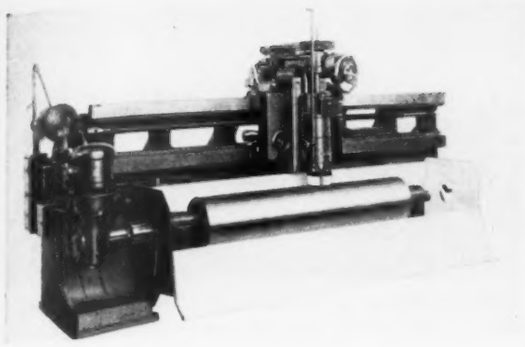
NPA
Printing and Publishing Division

Printing Plate Order Amended

Effective September 17, 1951, the National Production Authority amended NPA Order M-65 on conservation of metal in printing plates to simplify compliance with and administration of the original order. The amended order exempts textile print rollers used in textile finishing plants. It also adds magnesium to the list of restricted metals affected by the order which includes



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GRINDING AND POLISHING MACHINE

Precision Built to Grind and Polish to .0003"

Manufactured in two sizes, each being able to handle varying diameters and lengths of cylinders. Special Intaglio stones, using a combined concentric and eccentric motion give a smoother surface in shorter time than obtained with other machines. Water as a coolant eliminates all dust. Precision automatic feed—either continual or at end of each traverse—compensates for stone wear while grinding. When polishing cylinders, stone is "floated" with continuous adjustable pressure, resulting in a higher finish than obtained with paper. Variable speed motors permit a choice of grinding and polishing speeds.

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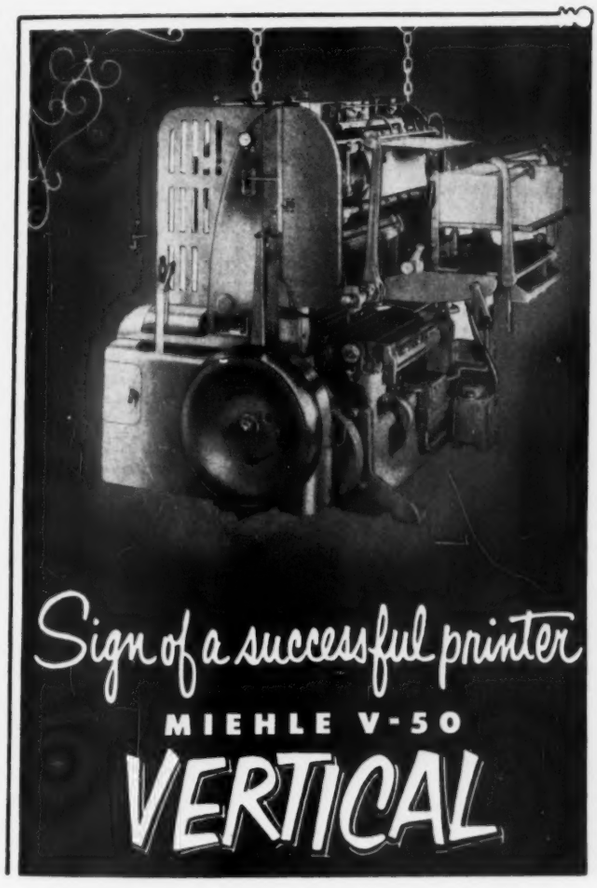

Sign of a successful printer

MIEHLE V-50

VERTICAL

"REGAL" MONOCORK

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This Press Blanket is by far superior to any cork packing that has ever been available to the industry!

We make this claim with no fear of contradiction. Its perfection is attested to by the fact that we have difficulty in keeping up with the demand.

No matter what your reason may be for not having these blankets on your machine, the simple truth is that you are denying yourself the best. Once you learn what "REGAL" has to offer, you too will be a constant repeat user.

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NEW ENGLAND FIBRE BLANKET COMPANY

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WORCESTER MASSACHUSETTS

BRANCHES: New York—Chicago—San Francisco—Tulsa

aluminum, chromium, copper, nickel, zinc or any alloy thereof. The order provides that possessors of plates are not required to treat them as obsolete if the owner requests that the plates be shipped to him.

It also provides for acquisition of plates on an optional blanket quarterly certification. Each person who acquires any printing plates shall endorse on each purchase order for such plates a statement in the following form: "The undersigned certifies, subject to statutory penalties, that the acquisition by the undersigned of the plates or restricted metal herein ordered will not be in violation of NPA Order M-65." Or the person acquiring printing plates shall file with his suppliers of plates on or before the first day on which he orders plates in each calendar quarter a statement in the following form: The undersigned certifies, subject to statutory penalties, that the acquisition by the undersigned of the plates or restricted metal ordered in the current calendar quarter will not be in violation of NPA Order M-65.

Persons possessing less than 1 lb. of metal in printing plates belonging to any one person are exempt from the order. In addition, the amended order removes the restriction on gauge of sheet zinc.

Eureka's New Illinois Plant—The Eureka Specialty Printing Co. of Illinois, subsidiary of the Eureka Specialty Printing Co. of Scranton, Pa., has begun construction of a 25,000 sq. ft. plant on a 5 A. tract in Danville, Ill. An artist's sketch of the new building, which is about 125 mi. south of Chicago, is shown above. The one story concrete block and steel structure, complete with railroad siding and truck docks, will be ready for occupancy in late 1951.

Poly 50

the "automatic" money-maker for every shop!

NEW, compact presses, designed and built to maintain production speeds of 5000 sheets per hour. Handles all paper stocks from onion skins to 28 pt. board. Ideal for heavy metal type and process color forms.

Provides unequalled ink coverage and hair line register . . . suction pile feeders . . . smooth, silent, controllable side guides . . . adjustable impressional strength . . . adjustable chain delivery.

All structural parts, four-track base, impression cylinder and bed extremely rigid. Cylinder journals supported in double row preloaded roller bearings.

Electrical units built-in as integral part of press, encased in oil proof housing, serviced by automatic lubrication system. Shift lever and push button control. High speed production, economical operation, ease of maintenance set the Poly "50" apart as a money-maker! Job printing made easy . . . earns a profit on every run regardless of size.

THE NEW POLY-50

SEND FOR PRICES AND FULL INFORMATION ON THE SENSATIONAL NEW PRESS!

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345 HUDSON STREET, NEW YORK 14, N. Y.

Plant Housekeeping

The office of Small Business of the National Production Authority recently issued a two-page pamphlet in which are itemized 69 points which should be checked periodically to maintain plant cleanliness, reduce accidents and increase production efficiency. It is pointed out that a well-lighted, clean and orderly plant generally has fewer accidents, better employee morale and a good production record. Free copies of *A Checklist for Small Plant Housekeeping* may be obtained from Printing Services, Dept. of Commerce, Washington 25, D. C., or from any Dept. of Commerce field office.

Motor Care Techniques

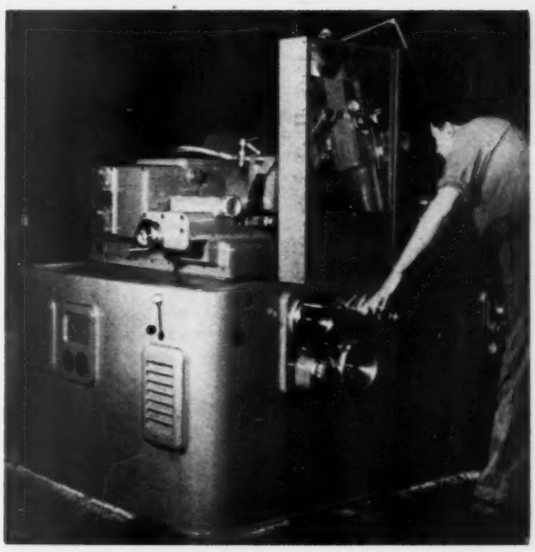
A pamphlet on *Motor Care and Maintenance Techniques* has been issued by the Office of Small Business, National Production Authority. The important factors and benefits of good care and maintenance of motor-driven lathes, planers, shapers, dril presses and similar tools are stressed in the pamphlet. It calls attention to the conditions responsible for the largest number of motor troubles and suggests that shop men watch for overheating, vibration, damage to commutator, dust and dirt in the windings and rotor, lack of lubrication, faulty bearings, and damage to cables and various connections. It is also suggested in the pamphlet that a systematic program of inspection, lubrication and cleaning to prolong the life of motors be undertaken. Copies may be obtained from Printing Services, Dept. of Commerce, Washington 25, D. C., or from any Dept. of Commerce field office.

Copper Scrap

The National Production Authority recently called on dealers and generators

of copper and copper-base alloy scrap to speed the flow of this vital material to custom smelters, ingot makers, brass mills, brass and bronze foundries and other users. The critical shortage of copper and copper-base alloy scrap already has forced a virtual shutdown of the important ingot-making industry, NPA said. If the supply of copper scrap does not improve in the near future, many brass and bronze foundries and refineries may be compelled to curtail or discontinue operations.

ATF Installs Swiss Grinder—Installed recently at the Elizabeth, N. J., plant of American Type Founders, Inc., is a Reishauer gear grinding machine which the company imported from Switzerland. An ATF gear expert is shown here setting the machine to grind a helical pinion for the main drive of a Little Giant Model 6 press. The same machine also cuts gears for the three ATF Chief offset presses. The individual electrical drive is comprised of seven synchronized motors. Table movements, feed and work centers of the Reishauer grinder are hydraulically controlled. The cutting lubricant is kept clean by a metal, drum-like magnetic wheel which collects and removes the steel grindings as it turns in a reservoir of lubricating oil. Equipped with diamond wheel dressers, it dresses the worm grinding wheels after they have processed some 40 or 50 gears.



Eastern Division SNPA Conference

THE Southern Newspaper Mechanical Conference (Eastern Division), was held at the Biltmore Hotel in Atlanta, Ga., on Monday and Tuesday, August 27-28. The registered attendance was 353.

Included in the conference program were separate group meetings for the different crafts. The conference sessions brought discussions of every phase of mechanical operations. There were a number of exhibits, in several of which machines were in operation for demonstration purposes.

L. H. Pickens, Greenville (S.C.) *News-Piedmont*, was chairman of the conference. Topic leaders included: Composing Room, C. L. Ray, Winston-Salem (N.C.) *Journal & Sentinel*; Pressroom, S. L. Sellers, Birmingham (Ala.) News Co.; Stereotyping Dept., Roy Vickery, Atlanta (Ga.) Newspapers, Inc.; Engraving Department, Ken Miles, Greenville (S.C.) *News-Piedmont*; Mailroom, M. M. Hussey, Tampa (Fla.) *Tribune*; Machinists, W. D. Jacobs, Mobile (Ala.) *Press-Register*; Smaller Newspapers, Cliff Wilkinson, Huntsville (Ala.) *Times*; Mechanical Superintendents & Production Managers, Stanley Myers, Atlanta (Ga.) Newspapers, Inc. Ray Crow of SNPA served as Secretary of the conference.

The conference opened on Monday morning with an address by Horace Powell, Vice President, Atlanta (Ga.) Newspapers, Inc. Mr. Powell welcomed the delegates to Atlanta and invited them to inspect the mechanical plant of the Atlanta newspapers. He spoke briefly on the mechanical problems posed by the

Pre-Shrink and Flat Scorcher

FEATURING:

Pre-Shrink attachment
Hinged instrument panel
Thermostatic Heat Control
one-piece heavy perforated steel cover.

OPTIONAL

Scorching Timer
Pre-Shrink Timer
Open front—two shelves
Closed front (illustrated)

Bearer arms hold weight of cover off mat and forms an oven for pre-shrink.

Can also be used as scorcher with bearer arms out of position.

Floor space 31" x 28"
Height—cover closed 33"
Height—cover open 56"
Shipping weight 250 lbs.
Rating—11 amps. on 220 v.

Showing bearer arms in position under cover for pre-shrink

	AC	DC
Model "FC" without timer	$250.00	$275.00
Model "FS" with one timer	275.00	300.00
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use of off-size newsprint and the use of three-color advertising.

Following the welcome address, the Monday session was broken up into separate group meetings for the mechanical departments. Special separate meetings were held on Sunday evening for Machinists, Smaller Newspapers, and Mechanical Superintendents & Production Managers. The separate group meetings were well attended and produced lively discussions. Many of the delegates expressed enthusiasm for this innovation, stating that the separate meetings had enabled them to discuss the problems of their own particular craft more fully and freely than in past conferences.

On Tuesday morning, a general session was held in which the topic leaders gave reports on their separate group meetings and brought up for discussion the interdepartmental topics which had arisen in the separate meetings. Among the principal topics discussed during the conference were the maintenance and operation of Teletypesetter equipment and the use of 64 and 65 in. newsprint rolls.

Cline Produces Air Force Gun—The first ten 20 mm. automatic aircraft cannon produced by Cline Electric Mfg. Co. were accepted recently by U. S. Army Ordnance. The company was commended by Col. S. R. Stribling, Chicato Dist. Ordnance Chief, for delivering the guns in less than six months after the execution of the initial contract. Officials of the Cline organization shown with one of the first guns are from left to right: Otto H. Loser, Comptroller; C. L. Rowe, Assistant to the Chief Engineer; H. R. Behr, Vice President and Chief Engineer; W. P. Scott, Chairman of the Board; W. G. Earle, Gun Project Director; P. A. Benke, Assistant to the Chief Engineer; and J. E. Parker, Methods Engineering Dept. Head.

On Tuesday afternoon, Julian Eberle, Mechanical Engineer of the Milwaukee, (Wis.) *Journal*, made a talk on *Production of R.O.P. Color*. Mr. Eberle discussed the 3-color process developed by the Milwaukee *Journal*, illustrating his talk with slides and tear sheets.

Conference delegates attended a banquet on Monday evening as guests of the equipment manufacturers and suppliers representatives. Harry L. Loyland of Wm. C. Herrick Ink Co., was chairman and Joe F. Schuman of Mergenthaler Linotype Co. was in charge of arrangements. Ed Hundley of American Type Founders was elected chairman of the Group for the next Eastern Division Conference.

W. D. Jacobs of the Mobile (Ala.) *Press-Register* was elected chairman of the Executive Committee of the Conference for the coming year. New members named to the committee were: C. T. Cargile, Murfreesboro (Tenn.) *Daily News Journal*; Clyde B. Daly, Knoxville (Tenn.) *News-Sentinel*; C. L. Ray, Winston-Salem (N.C.) *Journal & Sentinel*; and Roy Vickery, Atlanta (Ga.) Newspapers, Inc. They replaced L. H. Pickens, F. I. McDonald and L. W. Devine, whose terms expired this year.

Harris-Seybold Report

In its recently published annual report, the Harris-Seybold Co. reported that shipments during the year ended June 30, 1951, were the highest in the company's 60 year history. Net income for the year was $2,014,233. as compared to the $2,019,467. earned during the preceding year. The cover of the annual report, printed on a Harris offset press, contains approx. 30 pencil sketches in full color against a soft blue background of various uses of printed pieces. Inside a gate fold of the back cover are four-color illustrations of Harris offset and rotary letter-

(*Continued on Page 93*)

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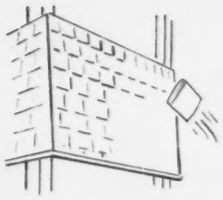

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little boys do
BIG BOY work, they
need a good start

Wherever papers are being delivered by carrier boys, it is the same story — Mature boys are leaving to do man work or fill a man's role with Uncle Sam . . . Little brothers need all the breaks in getting the papers delivered on time. One break is prompt papers, their promptness aided by troublefree, uniform Certified Mats.

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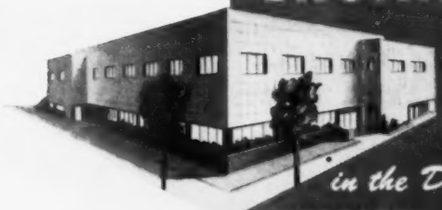

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Brown and Bigelow, South Bend
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Your perfect team for producing tough, uniform, scum-free prints in every kind of weather. Keeps all tones tight, re-etches beautifully and holds top. Uniformity, quality guaranteed.

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1 gal. $5.50
4 gal. (1 case) $5.00
12 gal. (or more) $4.75

COLD TOP DEVELOPER
1 gal. $2.40
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Miracle Plate Scrub
for COPPER, ZINC and MAGNESIUM PLATES. Tooths a plate faster, cleaner, better! Eliminates usual pumice mess—is non sink-clogging. Packed in handy 3 lb. dispensing containers.

Lots of 12 cans or more . . . $1.50 per can
Single cans . . . 1.75 per can

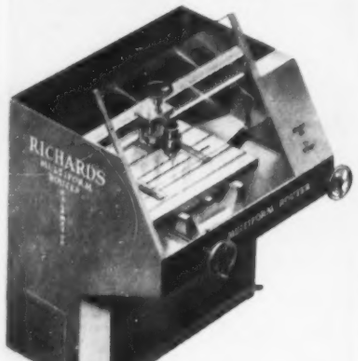
Order Today— Immediate Shipment
COMPLETE STOCK OF METAL, FILMS, SUPPLIES

Best In The Long Run
GENERAL PLATE MAKERS SUPPLY COMPANY
522 S. CLINTON ST., CHICAGO 7, ILL.

Elrod to Enquirer

H. D. Rindsberg, Production Mgr. of the Cincinnati (O.) *Enquirer*, announces appointment of Gordon F. Elrod to the position of Mechanical Supt.

RICHARDS ROUTERS—
Produce Extra Profits

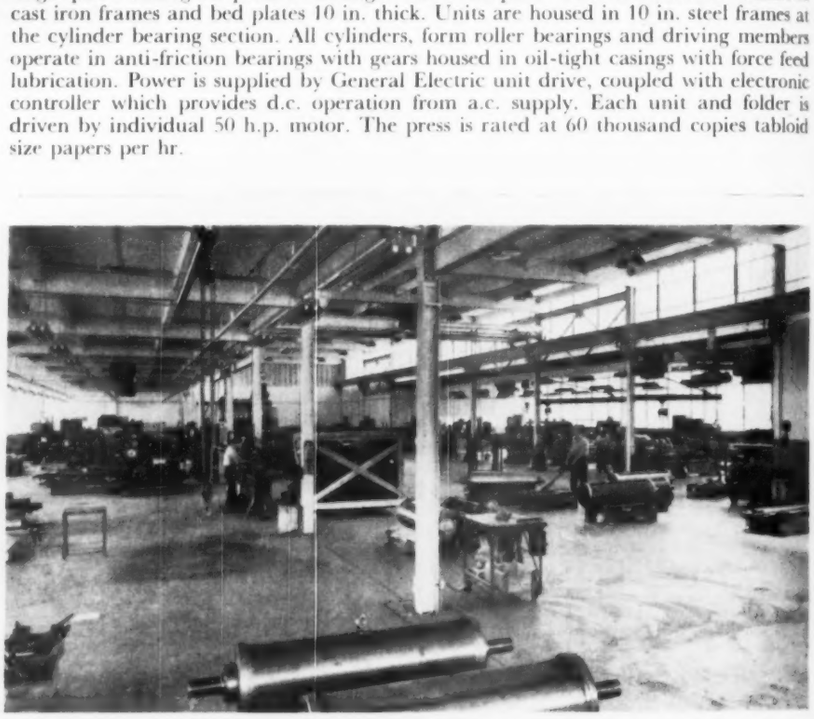


A WONDER WORKER
OUR NEW "*STRATOLINE*"
FULLY ENCLOSED ROUTER

J. A. RICHARDS CO.
Kalamazoo, Michigan

Initial Run of Wood Press—A Wood press is started off on its long period of service by Alicia Patterson, Publisher of Long Island (N.Y.) *Newsday*. The new four unit press capacity is 128 tabloid pages. Present at the initial run of the new press in this illustration were (left to right): Production Mgr. Alan Wood, General Mgr. Joseph Yauch, Press Foreman Otto Slinger, and Publisher Alicia Patterson.

Newsday has been suffering from growing pains and the new press with much other equipment has been installed to produce the increased circulation which reportedly exceeds 150 thousand copies daily. The press is fitted with many devices for continuous production and to guard against costly accidents. Heavy duty conveyors transport papers to the mailroom which has been mechanized. Each press unit is built into a single piece casting for permanent alignment of all parts. The substructures consist of cast iron frames and bed plates 10 in. thick. Units are housed in 10 in. steel frames at the cylinder bearing section. All cylinders, form roller bearings and driving members operate in anti-friction bearings with gears housed in oil-tight casings with force feed lubrication. Power is supplied by General Electric unit drive, coupled with electronic controller which provides d.c. operation from a.c. supply. Each unit and folder is driven by individual 50 h.p. motor. The press is rated at 60 thousand copies tabloid size papers per hr.



Rebuilt Machinery Plant A new plant on the outskirts of Chicago specifically designed for rebuilding printing machinery, economically suitable for rebuilding, will be officially opened by the Harris-Seybold Co. on October 19 and 20. At that time, the Rebuilding Machinery Dept.'s plant will be open for inspection by interested Graphic Arts people. It is located at 2010 N. Ruby St., Melrose Park, Ill. The company reports this plant is the first ever built by a printing equipment manufacturer for exclusive use in rebuilding machinery of its own make. In the Melrose Park plant, Harris-Seybold has consolidated rebuilding activities formerly handled by its New York and Chicago offices. The staff of factory-trained craftsmen will be under the direction of George H. Lestico. Assisting Lestico will be Walton I. Claire.

Tie Newspapers . . . Magazines

The SAXMAYER Way!

All SR Models with or without packer use jute, sisal or cotton twine . . . makes tight secure tie with one wrap and non-slip bow knot . . . ties various size stacked or rolled bundles without adjustment . . . Model SR1C illustrated especially adapted to conveyor systems for full AUTOMATIC operation . . . Small motor and hand operated models for tying single papers for home delivery available . . . Machines fully guaranteed . . . over 30 models to choose from.

LITERATURE ON REQUEST

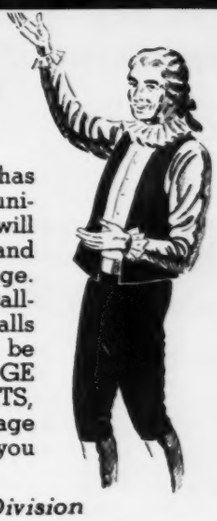
NATIONAL BUNDLE TYER CO.

BLISSFIELD, MICHIGAN

BEVERIDGE

BEVERIDGE MATS *SOLVE SHRINKAGE PROBLEMS*

More than one newspaper has called on us for mats of uniform, high quality that will provide one inch or one and one eighth inch shrinkage. Shrinkage is a problem calling for accuracy. It also calls for uniformity. You can be sure that in BEVERIDGE HIGH SHRINKAGE MATS, you get the right shrinkage every time. Let us tell you more.



New Products Division

The Beveridge Paper Company

Indianapolis 4, Indiana

(*Continued from Page 91*)

press presses, with other H-S equipment illustrated on the adjoining page. The 24 page, 11 in. by 8½ in. report also contains a review of the firm's operations.

Chicago Craftsmen Meet

A three-part program covering the history, equipment and advantages of gravure printing was presented recently at the initial 1951-52 educational meeting of the Chicago Club of Printing House Craftsmen. The meeting was opened by Chicago Club President, Arthur S. Colton, who introduced Floyd Larson, Second Vice President and Educational Chairman of the Chicago Craftsmen. DeWitt Patterson, Plant Supt., Color Engravers Div., Alco Gravure, Chicago, served as master of ceremonies for the meeting.

A. G. Fegert, magazine writer and representative, spoke on the earliest beginnings of gravure, its introduction in this country and its growth from that date to the present. M. E. Rada, Sales Engineer of The Goss Printing Press Co., revealed interesting facts and figures on modern gravure presses. Norbert Bergmann, Production Mgr. of *Look Magazine*, discussed *Gravure at Work*. He stated that in each issue of *Look*, which averages approx. 120 pages, 80 are printed by gravure. The meeting was closed with the showing of a color movie on gravure by Myron Homiak of Intaglio Service Co.

Straight Talk

(**Continued from Page 62**)

mine whether he is contributing all that he reasonably can to the well-being and progress of the industry from which he derives his livelihood. Every thoughtful supplier knows that he has a definite and measurable stake in the continuing ability of publishers to make a profit year after year."

Actually, none of the problems of equipment manufacturers and newspaper publishers are beyond solution. The fact that we are beginning to recognize and define those problems is half the battle.

"I'm sure we have the determination to carry on from there," Mr. Reed concluded.

A group of Master Printers of Switzerland were guests of the Miller Printing Machinery Co. in Pittsburgh on September 7 to 10 inclusive. They visited the printing plants of Herbick & Held Printing Co., William G. Johnston Co., and Westinghouse Electric Corp. Those present reading from left to right: W. P. McDonough, Treasurer of Miller Printing Machinery Co.; Marcel Heng, Manager and Director of Imprimeries Reunies SA; Charles Bucher, Partner of Buchdruckerei C. J. Bucher AG; Gordon Montgomery, President of Miller Printing Machinery Co.; John H. Szel, Export Agent for Miller Printing Machinery Co.; Hch. Pulfer-Conzett, Manager and Director of Buchdruckerei Engadin-Press; Theodor Meyer, Son of Owner and Plant Manager of Buchdruckerei; Ernst Lopfe-Tobler, Partner of Buchdruckerei E. Lopfe-Benz AG; Hermann Suter, Manager of Buchdruckerei Neue Zurcher Zeitung; Emil Fraefel, Technical Director of Winkler, Fallert & Co., A.G.; Paul Broglie, Sales Manager of Chromos A.G.; Dr. Hans Bachmann, Manager and Director of Buchdruckerei Keller & Co. AG.

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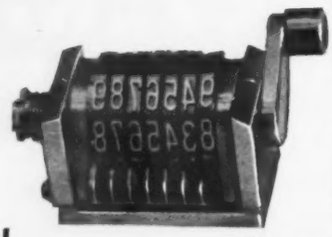
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Anchor Dealers

Edward S. Jasser, Vice President in Charge of Sales for the Anchor Chemical Co., Inc., has announced several new Anchor dealers. They are as follows: Acorn Paper Co., Inc., Philadelphia; U. S. Printing Supply Co., Pittsburgh; Graphic Supply Co., Washington, D. C.; The Hilton-Hawley Co., Cincinnati; Caxton Printers Supply Co., Cleveland; AAA Printing Supplies, Detroit; Ace Composition Supply Co., Kansas City, Mo.; Central Paper Co., Pawtucket, R. I.; T. J. Murphy Co., Philadelphia; H. S. Prescott Ink Co., Springfield, Mass.; Crowe Printing Ink Co., Philadelphia; Harry Guckert Co., Pittsburgh; The Gilbert-Baker-Midlam Co., Dayton, O.; The M. L. Abrams Co., Cleveland; Turner Printing Machinery, Inc., Detroit; Newhouse Printers Supply, Kalamazoo, Mich.; C. S. W. Plastic Types, Inc., Rocky Hill, Conn.; George R. Keller, Inc., Washington, D. C.; and Wild & Stevens, Inc., Boston.

Sherwin-Williams

(Continued from Page 39)

Williams paint. Three 5 ft. by 8 ft. spray booths are used in this operation. A large room adjacent to the spray booth area is devoted to the drying of the paint sprayed sheets. Space in the remainder of the department is consumed by long storage bins, shading benches, paint storage bins, gathering tables and cupboards.

To aid the drying process, unheated air is constantly being circulated throughout the room. In performing this important function, the department is equipped with Anemostats which spread the air through the room at the rate of 1000 cu. ft. of air per min. dor drying the painted sheets. Separated by a wall from the rest of the Painting Dept., the drying room in the spray coated area is treated to 38 changes of air per hr.

The Bindery

As in other printing plants, most of the work from the Sherwin-Williams pressroom eventually winds up in the bindery for the finishing operations. Five folding machines, four of which are Baum and one an Anderson, perform the numerous folding operations in this department. A recent addition is a 40 in. Seybold paper cutter. Other items of equipment include three stitching machines, round cornering machines, paper drill, paper punch, padding racks, as well as Addressograph,

Photocompositor Inventor Visits Installation — Dr. H. J. J. A. de Geoij, inventor of the ATF-Hadego photocompositor, on a tour of this country and the West Indies, recently visited a commercial installation of the equipment at Typographic Service, Inc., Philadelphia. His host was Samuel A. Dalton, Typo's president. Dr. de Geoij, who is Vice President in Charge of Research cf Drukkery de Spaarnestad, Haarlem, Netherlands, invented the machine several years ago. ATF officials present during Dr. de Geoij's visit are shown from left to right: Joe Loeffler, operator; Mr. Dalton; H. S. Ferguson, Manager of ATF's Philadelphia branch; the inventor; Fred A. Hacker, ATF Vice President; Matt Colfer, Philadelphia branch salesman; and Steve Mucha, ATF-Hadego installation serviceman.

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The Printers Supplymen's Guild of Cincinnati recently held a farewell dinner for William H. Hammett, Cincinnati District Mgr. of Miehle Printing Press and Mfg. Co. Hammett has been recalled to active duty in the U. S. Navy. He served five years in World War II, attaining the rank of lieutenent commander. He will be stationed in the Bureau of Ordnance, Washington, D. C. Hammett was one of the founders of the Cincinnati Guild and was Second Vice President. Shown at the dinner from left to right are: Harold Blacker, Verne Crane, J. L. Dougherty, William C. Arens, Kenneth N. Cramer, Lee Augustine, Mr. Hammett, William Wagner, George Vitt, Louis Croplis, and Alfred Lamson.

Mimeograph and Multigraph machines.

More than a dozen gathering tables are used in the bindery for performing the various hand operations. Still more space is occupied with steel shelving for storage purposes. This type shelving is noticeable throughout the entire plant. An interesting note is that the assembled shelving in the Printing Division comprises approx. 100 T. of steel.

Sampling Dept.

In the Sampling Dept. the operations of die-cutting and applying the thousands of Sherwin-Williams paint samples to color cards are performed. As the 24 in. by 38 in. painted sheets are received from the Painting Dept., two paper cutters are used to cut them into ¾ in. strips. These strips are then die-cut on a Walsh Punch Press into chips of any shape or length.

An interesting note in the die-cutting operation is the manner in which the punch press operator determines a certain number of the cut strips for feeding into the press. Rather than count each lift manually, a 6 in. divider is set to the thickness of a definite number of strips. All that is necessary then is that the punch press operator insert one divider leg between the sheets to obtain the same number of strips each time.

After the strips have been cut up into chips, they are moved to the New Jersey Automatic Chipping machines for application to the color cards. These machines will attach a complete set of 24 color chips in one stroke to a card at a production speed of 1200 sets per hr. Production on the company-designed hand-attaching devices used previously was only 1200 to 1400 sets per machine per day.

Novel Color Chip Affixer

In operation, the automatic machines pick a painted chip simultaneously from underneath each of the 24 boxes at the feeder end of the machine. This is done by a square plate equipped with 24 suction cups similar to the type used on the feeder of a press. The plate moves upwardly beneath the chip boxes to make contact with the individual chips. The operator at the feeder end has placed the chips in the boxes with the painted side facing up. This places the position of the chip on the suction cup with the painted side face up while the cups grasp them from the unpainted side.

As the feeder plate moves forward to the center of the machine, a transfer operation takes place. This is accomplished with a similar plate equipped with the same number of suction cups. As the first plate releases its suction hold on the chips, the second plate picks them up. The painted side is now held by the cup while the unpainted side is free.

The second plate moves forward toward the delivery end of the machine passing the set of chips over a revolving glue roller. This permits the unpainted side to receive a coating of glue for attachment to the color cards. As the plate moves downward and makes contact with the color cards in the hopper, the chips are placed on the card in exact position and are attached by pressure exerted from the plate. When this operation has been completed, the suction is released freeing the glued-on chips from the plate and an operator removes each card by hand from the hopper.

By-Passing the Bindery

Work which entails only cutting, trimming or no other operations by-pass the bindery and sampling departments completely, and move directly to the Press Finishing Dept. This department is equipped with two 50 in. Seybold Paper Cutters for performing the cutting or trimming operations. Adjacent to this is the Shipping and Receiving Dept. which allows for fast handling of stationery or labels to be shipped out.

The greatest bulk of the floor area in the stationery, label and ad service departments is used for storage of the thousands of these items printed by the Sherwin-Williams plant. Still other areas between these departments is used for bulk storage of paper stock for the pressroom.

ADVERTISERS' INDEX
October 1951

P. E. E. REPRESENTATIVES

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MELBURN O. SIMMONS, Mid-West Manager, 333 North Michigan Ave., Chicago 11, Ill. Phone: DEarborn 2-6467.

American Publishers Supply, Inc. 89
American Type Founders 23, 24, 25, 26
Amsterdam Continental Type and Graphic Equipment, Inc. 85

Baum, Russell Ernest 83
Beveridge Paper Co., New Products Div. 93
Bingham's, Sam'l, Son Mfg. Co. 4
Blatchford Div., National Lead Co. 74
Booth, The E. A., Rubber Co. 78
Burgess Cellulose Co. 79

Certified Dry Mat Corp. 91
Challenge Machinery Co., The 8
Chemco Photoproducts Co., Inc. 31
Cline Electric Mfg. Co. 69
Cottrell, C. B., & Sons Co. 27
Cromwell Paper Co. 74
Cutler-Hammer, Inc. 10, 11

Dayton Rubber Co., The 21
Dexter Folder Co. Inside front cover
Dickerson, Robert W. 95
Doyle, J. E., Co., The 91
Dutro, Orville, & Son, Inc. 94

Eastern Newspaper Supply, Inc. 73
Edes Mfg. Co., The 90
Electric Boat Co., Printing Machinery Div. 80

Federated Metals Div., American Smelting & Refining Co. 20
Force, Wm. A., & Co., Inc. 94

General Plate Makers Supply Co. 92
Gifford-Wood Co. 85
Goss Printing Press Co., The 2
Greer, Robert Royden 94
Griffiths, John, Co., The 95

Hamilton Mfg. Co. 68
Hammond Machinery Builders, Inc. Inside back cover
Harris-Seybold Co. 83
Herrick, Wm. C., Ink Co., Inc. 95
Hoe, R., & Co., Inc. 28
Huber, J. M., Corp. 14, 15

Ideal Roller & Mfg. Co. 18
Imperial Type Metal Co. 76, 81
International Printing Ink, Div. Interchemical Corp. 17
Intertype Corporation Outside back cover

Justrite Mfg. Co. 91

Lake Erie Engineering Corp. 67
Lanston Monotype Machine Co. 16
Link-Belt Co. 29
Linotype Parts Co. 76
Ludlow Typograph Co. 7

Matrix Contrast Corp. 32
Mergenthaler Linotype Co. 63
Miehle Printing Press & Mfg. Co. 87
Miller Printing Machinery Co. 9
Minnesota Mining & Mfg. Co. 22
Monomelt Co., Inc., The 75, 91
Morrison Company, The 65

National Bundle Tyer Co. 93
New England Fibre Blanket Co. 87
Nolan Corporation 95

Offen, B., & Co. 95

Paper Manufacturers Co. 78
Parsons & Whittemore, Inc. 88
Pereira, Morton L., & Associates 91

Rapid Roller Co. 12
Rathbun & Bird Co., Inc. 94
Richards, J. A., Co. 92
Robertson, R. R., Co. 86
Rouse, H. B., & Co. 77

Scott, Walter, & Co. 6
Shulman, Ben, Associates, Inc. 95
Sta-Hi Corporation 1
Standard Process Corp. 87
Star Cement Co. 95
Strong Electric Corp. 3

Teletypesetter Corp. 82
Timken Roller Bearing Co., The 13
Tingue, Brown & Co. 71

Vandercook & Sons, Inc. 30
Vulcan Rubber Products, Inc. 84

Wood Flong Corp. 87
Wood Newspaper Machinery Corp. 19

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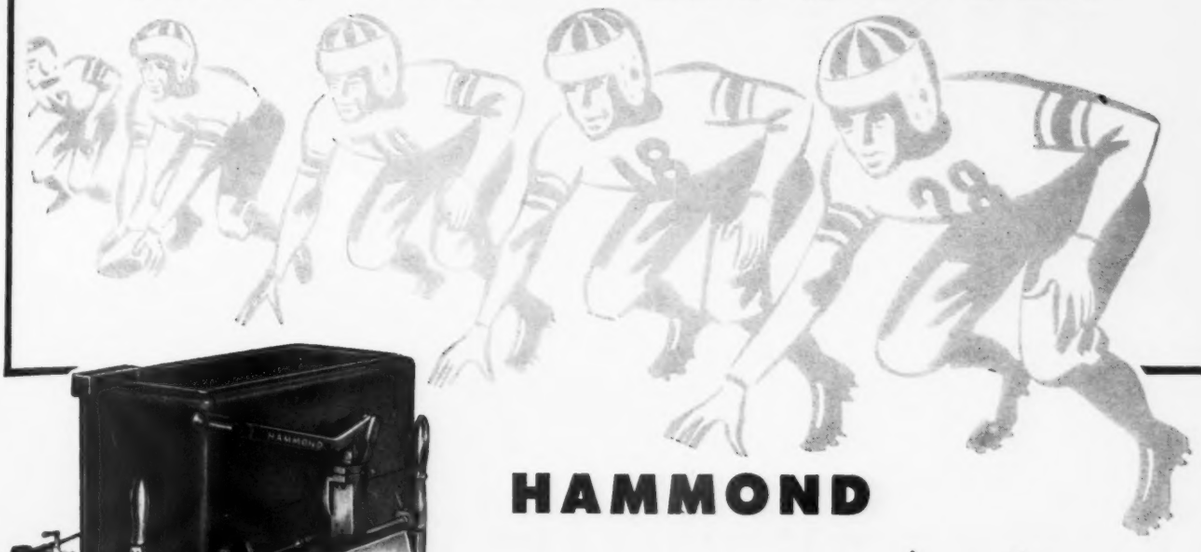

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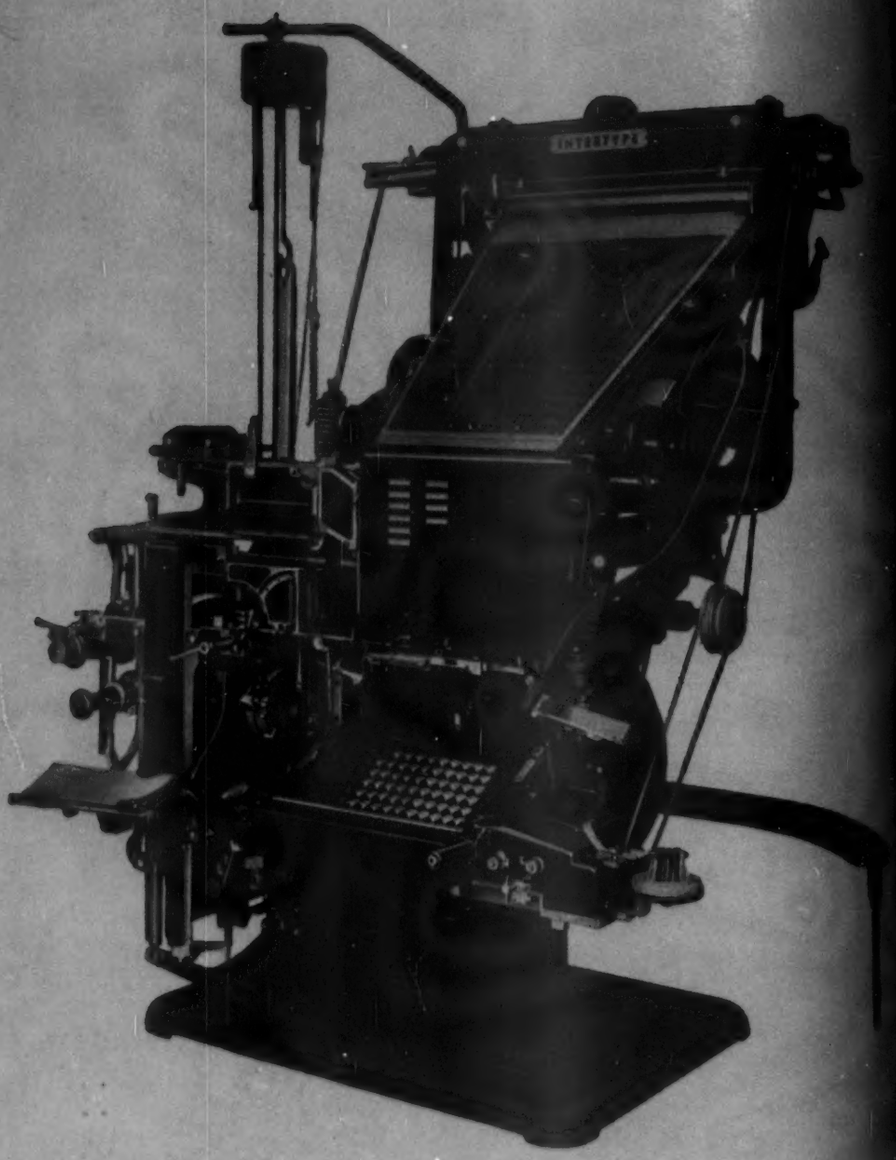

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